

The magazine for AUSTRALIAN amateurs

Volume 72 No 7

July 2004



Amateur Radio

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Our Cover this month

"Radio has been an important part of just about all Antarctic expeditions since Sir Douglas Mawson took a spark radio station to Macquarie Island in 1911". Women are now very much part of the team. The cover picture shows Donna Simpson at Casey station (AAD photo 35589C1, Copyright C of A 1994). The background shows the VHF Antenna array at Davis, February 2003. (Photo by N. Storey. First published in "Aurora", the ANARE Club Journal Vol 22. No 4 page 8, in an article on VHF Radars at Davis.) See story page 27.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiences, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

Back Issues

Back Issues are available directly from the WIA Federal

Office (until stocks are exhausted), at \$4.00 each (including postage within Australia) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus an additional \$2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radio communication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

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Editorial Comment

Colwyn Low VK5UE

How things are done in the real world

Greetings to all our readers.

The WIA is now working on the details of how it will operate. There are still lots of things to be ironed out and there is still a lot to be understood about how things can be done in the real world.

The ACA review outcome is being worked on. I have had a few comments from readers about how the privileges can be appropriately distributed between the proposed three licence grades. Please pass all comments to the Directors, but please also make some suggestions as to how your personal view of the licence grades could be implemented.

I have also had brought to my attention some of the problems of buying equipment either through the Ham Ads in AR or on the Internet. The advertiser has a responsibility to those who answer their advertisements. There needs to be a commitment to being civil and to appreciate the fact that the prospective purchaser is interested in purchasing your equipment, so if it is already sold just pleasantly say "Sorry it has gone" and thank them for their enquiry.

Further if you offer to sell a Deceased Estate remember you are going to get a lot of calls which can get irritating. One final point you have to be very clear about the conditions of the sale, if you say it works then you could be up for fixing it if it does not work when received by the purchaser. So make sure the items are carefully packed with foam or bubble wrap to reduce shock and vibration in transit.

This month I have had the perennial problem of what to put on the cover. I am always on the hunt for good clear pictures, which have a bit of equipment and possibly some people with it. This month I am grateful to the Department of Environment and Science, Antarctic Division in Kingston, Tasmania for the cover picture. Next month's cover comes from the Department of Veterans' Affairs.

So please see if you have a good picture for the cover preferably in Portrait orientation and either a photograph for me to scan or a digital picture at 300 dpi, a jpeg or tiff file about 500 kb should do. With any scanned or digital original please let me have the original as well as any processed image you think presents better. In cooking terms we cannot unscramble the egg if there are problems in the preparation.

My activities this month, the few spare moments I have are on my FM-828 conversion to 50 MHz. Ordered the crystals for 52.525 MHz and then on receipt found I had used a divide by 6 for the TX crystal instead of 8!!!!!!! So back to Beacon Crystals, at Craigmore, up the road from me for the correct crystal and sort out a X3 +X2 oscillator unit circuit to use as a marker/beacon with my surplus crystal.

Finally, the change to the national WIA from the federated WIA is still poorly understood by some members. We could have continued the discussions at grass roots level for a few more years or as we did, have the Divisional Councillors at the Federal Convention decide to bite the bullet and get on with an agreed constitution and a general set of aims. We are now on the way. Some things are easily done, others are much harder than at first thought. However Australia needs a NATIONAL Amateur Radio body. In 2006 we will have a better idea of how things are and for the first time members will have a national ballot to elect the Directors. We will continue to publish each month in AR comment on current WIA activities. News from Q-News and state news broadcasts will bring weekly reports. So please pass your concerns to the Directors and stick with us through the initial teething problems.

Colwyn VK5UE

WIA adopts revised position in response to the ACA "outcomes of the review of amateur service regulation"

The following statement is made on behalf of the Board of the WIA:

On 17 June 2004 the WIA Board published a statement in response to the ACA paper "Outcomes of the Review of Amateur Service Regulation".

The Board was very careful to acknowledge in its statement the consultation process adopted by the Authority, and generally supported the outcome.

It did however express concern at the extent of the differentiation between the privileges of the new standard level (novice) and the advanced level licenses and the incentive to up-grade, and at the same time pointing out the difficult position it found itself in, probably offending either the novice licensees or other licensees, depending on whatever it did or did not do.

In the end, the Board decided to advocate the removal of the 14 MHz band from the proposed standard (novice) licence privileges.

This decision, published through broadcasts and various web sites has caused considerable comment, both in favour of and against the proposal. The comments are appreciated, and helpful.

The Board has accordingly reviewed that decision, having regard to the various comments it has received.

The following matters are seen by the Board as being particularly relevant to its considerations:

- The WIA has been informed by the ACA that it sees no reason to review its basic policy decisions, for example its decision to adopt a three-tier licence structure for the amateur service rather than a two-tier structure as suggested by the WIA;
- In any event, a significant number of amateurs support the basic three-tier structure proposed by the ACA;
- The extent of the differentiation between the standard and advanced

licence remains a matter of concern to the Board;

- However, the position suggested by the WIA in respect of the 14 MHz band is, on the face of it, inconsistent with the position it adopted in its original submission, though that position was adopted in the context of a two-tier structure;
- While views are split, there are many full and novice licensees who do not support the proposal.

In light of the ACA position, the Board does not consider it either useful or appropriate to seek to reopen the basic policy issues, though it is confident that it will have adequate opportunity to make submissions on the many very important implementation issues and the issues left open in the Outcomes paper.

The Outcomes paper proposes that the small WARC bands and the 1.8 MHz band continue to be restricted to the advanced licensees, as it is understood that they are viewed by the ACA as being bands appropriate for access by more highly qualified licensees. The Board sees that approach as providing some differentiation, but in itself not enough.

The Outcomes paper also proposes that Australia participates in CEPT Recommendation T/R 61-01, and when that occurs, it can be assumed that the visiting advanced licensee will have privileges that the other classes of Australian licence do not have.

At the same time the Board will lodge a further and expanded application for spot frequencies around 5 MHz, building on the application initially lodged last February by the Council of the Victorian Division. The Board believes that given a strong proposal from the WIA this suggestion will be seriously considered by the ACA.

In addition, the allocation of a LF band, as in New Zealand, is also being

pursued, and other privileges may from time to time be identified for the advanced licensee, furthering the differentiation.

The Board believes that this approach would be more acceptable to many than the original approach in respect of the highly attractive 14 MHz band.

Accordingly, the Board has decided to accept the ACA position, which provides 14 MHz band privileges for the standard (novice) licensee.

In this statement, as with its earlier statement the Board has addressed only what it perceives as the major issue flowing from the outcome. There are very many other issues of detail that have been drawn to its attention.

As it said previously, the Board is confident that it will have the opportunity to address these issues in an ongoing process of consultation with the ACA as part of the process of preparing a new LCD and generally addressing the detail of the implementation of the restructure.

A Comment

This revised Statement made by the Board represents the product of much consideration and discussion. It sets out a position supported by all Directors.

I acknowledge that others may have different opinions. Indeed, in this issue of AR, Jim Linton expresses his own and different views.

However, I hope that the fact the Board of the WIA was prepared to listen to constructive comment, and no doubt to the disappointment of some, change its position will be seen as being constructive, and a step along the path of reinvigorating our hobby.

The EH antenna

- Part 4

The EH dipole antenna with the L+T and Star type of matching and phasing networks

Lloyd Butler VK5BR

In my previous articles on the EH antenna, I have mainly concentrated on the antenna which uses a matching and phasing circuit network defined as the L+L network.

I will now discuss two other methods of matching and phasing used by the EH Antenna inventor, Ted Hart W5QJR. Ted has called these methods the L+T system and the Star system.

In the L+L network, I described how two E fields were formed, the primary field from a voltage developed differentially and a secondary field from a 90 degree phase shifted voltage developed longitudinally. (Displacement current from the secondary E field generates the H field in phase with the primary E field). In the L+L antenna the two field cylinders are fed by the balanced form of the L+L network. However in the L+T and Star antennas, the lower cylinder is connected directly to the 50 ohm coax shield and the system is unbalanced. Clearly, the idea of one field voltage developed differentially

and the other longitudinally does not apply to these antennas and a different explanation must apply.

The L+T System

Figure 1 shows a typical L+T network with component values taken from the EH Antenna Calculator on the EH Internet site. The values were set for a 14.1 MHz EH dipole with 9pf of capacitance. The L+T name becomes apparent when L1 is considered as two separate inductors for the L and the T sections combined. The network is particularly applicable to an EH antenna which Ted Hart has called the Backpacker and which he and an associate have distributed in kit form throughout USA. The series antenna radiation resistance for this antenna has been defined by Ted as around 30 ohms.

Photo 1 - 40 metre Star EH Antenna manufactured by Arno Electronica
(Photo courtesy Of Julie Fubbri & Steve Galestri of Arno)



To understand the network better, I have broken down the complete network into individual L sections which are coupled together. (See figure 2).

To do this, L1 and L2 are each split into two separate inductive reactances in series and C2 is split into two separate capacitive reactances in parallel. (The reactance values when combined closely fit the reactances derived from original form of Figure 1.)

The first L network, C1-L1A forms a match from the 50 ohm input to 25 ohm at A. The second L network L1B-C2A forms a match from the 25 ohm to 200 ohm at B. The third L network C2B-L2A forms a match from the 200 ohm to 34.5 ohm at C. (Reactance values are easily calculated from formulae in the VK3IY article, reference 5). If the source at the input looking back into the coax cable is 50 ohm resistance, then looking back from C into the network will be 34.5 ohm resistance.

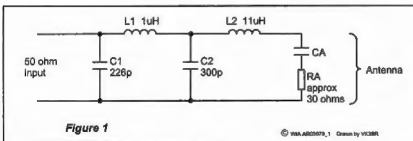


Figure 1 - The L+T matching and phasing network.

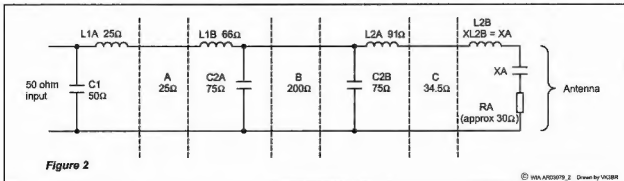


Figure 2 - The L+T network broken down into separate L networks and last antenna resonating inductor.

Now we come to L2B. The reactance of L2B is simply made equal to the antenna capacitive reactance X_A so the antenna is then resonated and the output of the network at C sees a resistance equal to the sum of the radiation resistance and any loss resistance (mainly in the inductor).

The secondary E field

The next question is how do we get a 90 degree phase shift and how is a secondary E field applied. As the network at C looks as a resistance, we can substitute it for a resistive source feeding a series resonant circuit formed by L2B and X_A as in figure 3.

A characteristic of this circuit is that there is a 90 degree phase shift across the inductor. There is clearly a primary E field developed by the potential between the top cylinder and the general common reference of the bottom cylinder and coax shield. My theory is that there is also a 90 degree phase shifted secondary E field formed between the potential on the inductor around the vicinity of the C junction to the common reference. As in the L+L antenna, the displacement current from this secondary field generates the H field in phase with the primary E field.

In using this method of generating a 90 degree phase shift, an interesting characteristic is that it only works if the source is resistive. In figure 4 an inductive reactance has been added to the source. Observe that to bring the circuit to resonance, the inductive reactance of L2B must be less and the phase shift across it must be less than 90 degrees.

I have tried operating the tuned antenna directly from the 50 ohm coax cable. It seemed to me that as the

antenna resistance was about 30 ohm, the mismatch would not be that great. This actually worked but the interaction between antenna tuning and movement of the cable (as experienced on other EH antenna systems) was particularly high. I formed the opinion that the preceding elements of the L+T network were needed to provide a coupling buffer to reduce this effect. However, even with the buffer, reactance at the source can reflect through to cause some shift of phase in the series tuning inductor.

Concerning source reactance, one interesting bit of history concerns field tests carried out on a Backpacker EH antenna by Adam Macdonald N1GX. He found that when he eliminated the coax feed to the antenna and substituted a local battery powered oscillator at the antenna, the radiated field strength dropped dramatically. He (and others) concluded that this showed most of the radiation from the EH antenna was due to its feeder coax. However, Ted Hart strongly argued that the antenna was phase sensitive to the source and that the local oscillator had a reactive source impedance which upset its operation. The difference of opinion was never resolved except that results from my own tests, with out-of-balance current on the coax inhibited, did not support Adam's conclusion. (Refer to my previous articles in AR).

The Star antenna

Ted Hart's more recent version of matching and phasing of the EH dipoles is illustrated in figure 5. He has called this the Star. Basically it works much the same as in figure 3 except that instead of injecting the source signal in series with the resonating inductor, the signal is coupled in by magnetic induction and the coupling to set the matching is controlled by the position of the input

tap. As in figure 3, the primary E field across the dipole cylinders is 90 degrees phase shifted to that at the inductor input and there is a 90 degree phase shifted secondary E field between that point and reference common connected to the lower cylinder.

To get the thing working with the 90 degrees phase shift and low SWR reflected to the 50 ohm coax cable there seems to be a need to add a small amount of inductive reactance in series with the input tap and a small coil is added as shown in figure 6. I haven't tried to evolve a theoretical explanation but I have confirmed the need for this on my own test antenna with SWR meter connected and monitoring of phase with the CRO across input and output of the network.

An experimental 20 metre Star matched antenna

To carry out some tests on the Star matching idea, I assembled a rough model for the 20 metre band as shown in figure 7. More detail is given in the following text:

I put to use 600 mm length of 62 mm diameter PVC tube which I had on hand. Over this I fitted two metal sleeves 65 mm in diameter and 70 mm long to form the dipole cylinders. These were spaced 70 mm apart.

An open wound coil from the junk box was fitted at the bottom of the PVC tube, 130 mm down from the bottom of the lower cylinder. The coil, with a diameter of 50 mm, was wound with 22 turns of 18 SWG tinned copper wire space to a length of 80 mm. The spacing enabled it to have sufficient room between turns to tap the coil where required with crocodile clips. To obtain a good match, I found that 15 turns for the top tap and

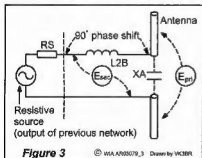


Figure 3 - 90 Degree phase shift

developed across series resonating inductor and resultant potentials to

develop two E fields 90 degrees phase separated.

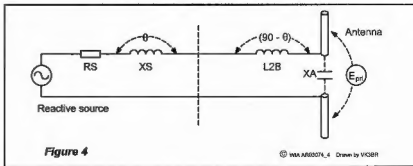


Figure 4

Effect of reactance added to source series resonating inductor now has less than 90 degrees across it.

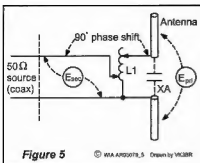


Figure 5

© WIA AR30375_5 Drawn by VK3BR

Figure 5 - The Star EH matching system showing 90 degrees phase shift and the two E field potentials developed.

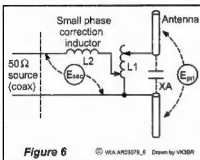


Figure 6

© WIA AR30375_6 Drawn by VK3BR

Figure 6 - The Star antenna matching with additional series phase correction coil added.

4 turns for the lower input tap was close to the mark.

To locate the coil in place, a second PVC tube, 45 mm in diameter was fed as a tight fit through the centre of the coil and into the main PVC tube. The two PVC tubes were held together with the aid of three wood spacing pieces and self tapping screws. The coax input connector was located at the bottom of the smaller and lower tube.

The input series coil (a later addition not originally planned) was made up of 8 turns of 20 SWG tinned copper wire open wound to a length of 30 mm and with a diameter of 20 mm. The coil was left to float in space with one leg soldered to the 4 turn tap on the main coil. I found best matching was achieved with the other end tapped at 6 turns.

As an engineered example, my matching assembly would hardly take a prize but it enabled me to adjust the coil taps and carry out operational and performance tests as I needed to do.

The Star preference

Ted Hart seems to be concentrating on the Star method of feeding the EH antenna as the now preferred method for amateur radio use. Both the L+L and

the L+T models include two variable capacitors which are adjusted to tune up the antenna. In the Star method, resonance is with the self capacitance of the antenna and there are no tuning capacitors used. Ted has stated that he considers this less difficult for the radio amateur to get the antenna working. However it does seem to me that unless the design information is tied down to very rigid specifications, there is a need for some means to easily adjust the position of coil taps to tune the antenna right on the dot. Tying down adjustments to fixed positions is also made more difficult if the out of balance current in the coax is not inhibited with a trap and tuning is allowed to interact with the placement of the coax.

So there is a challenge here. What is the design of a coil with accessible taps which can be fitted around the supporting PVC tube and which can be easily assembled by the radio amateur with limited workshop facilities?

For those who may wish to purchase an assembled EH antenna or a kit

I asked Ted Hart the market situation for supply of ready made EH antennas or kits for the amateur bands as at the date of preparation of this article (December 2003). The following is information he supplied:

George Jones KA4Q in USA continues to supply kits for the 20 metre Backpacker (L+T) antenna. George believes it is easier for a Ham to adjust the screws on the capacitors than to adjust the inductance of the "STAR" version. Although George is associated with EH Antenna Systems, he is doing this on the side from that company. However information on his antennas can be found at the EH Antenna Web site sponsored by the company (reference 6).

Steve Galastri IK5IIR of Arno Elettronica in Italy (Reference 7) now supplies Star type EH antennas for the 40, 80 and 160 metre band. With no tuning capacitors needed, they handle powers of 2 kW of SSB and 500 W of continuous power. However he still makes L+L type antennas for the higher frequency bands. A typical Star antenna for 40 metre is shown in figure 8. Observe the metal sleeve on the outside

of the protective cover used to fine tune the adjacent coil inside.

A new company (yet to be named) led by JA3FR in Japan will introduce "STAR" versions for the 80, 40 and 20 metre bands very soon. The 80 metre version contains a small motor and tuning slug to allow coverage over the range of 3.5 to 4 MHz and it has the

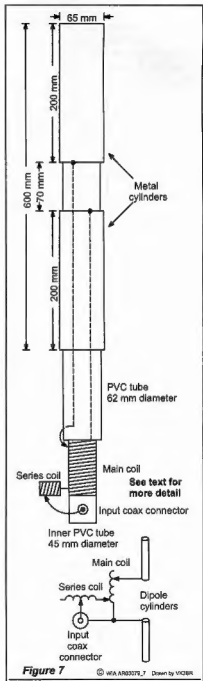


Figure 7 - An experimental 20 metre EH star antenna.

The National WIA and the clubs

On 16 May 2004, when the Federal Council adopted the new Constitution for the Wireless Institute of Australia, there were about 69 clubs that were members of the WIA, that is, members of a Division.

Let me make my position in respect to clubs quite clear, a position that has not really changed for very many years. I believe that a strong national amateur society is essential. That is why I have done what I have done to help develop a new national WIA. But, at the same time, I believe that clubs are essential, as they can do what an organisation such as the WIA (whether structured nationally, or as it was, federally) cannot do. The club provides a meeting place, a place for projects, a place to participate in amateur radio as it should be, a place to attract new amateurs, a place where the voice of amateurs can be heard, and listened to.

Indeed, in this country, there are clubs in the far north Queensland, in the Northern Territory, and in other parts of Australia where the only focus for amateurs is the radio club, and where the WIA is about as remote as it can be.

While I accept that the WIA may be physically remote, it should not be meaningless, and that is what the Board of the WIA has identified as a need. It is

an area for which I am taking personal responsibility.

What is the position of clubs under the new Constitution?

The rights of "affiliated clubs" are set out as follows:

"An Affiliated Club:

- (i) may describe itself on its letterhead and other material as an Affiliated Club of the Wireless Institute of Australia;
- (ii) may be represented at any general meeting of the Institute;
- (iii) may participate in any conferences or meetings conducted by the Institute for the benefit of Affiliated Clubs;
- (iv) shall not be liable to pay any annual subscription; and
- (v) shall not have any vote as a Member."

To treat a club as an ordinary member doesn't make sense. If there are 4,000 members of the national WIA, a club with 150 members having one vote is not meaningful. Anyway, we want clubs with 150 members to make sure that their 150 members are also members of the WIA.

Hopefully, this approach will not encourage individual amateurs to say that they did not need to be a member of the WIA as they were a member of a

club that was a paying member!

However, we do want affiliated clubs to be in a special position.

But what is an "affiliated club"?

That is where it gets hard, because the Constitution says that the Board of the WIA shall define the criteria for a club to become an "Affiliated Club" of the Institute. We have to define the criteria. And we haven't. And, we can't. At least, not now.

We need the clubs, but we don't really know what the clubs need from us.

That is why I hope to be invited to visit as many clubs as possible over the next months, to hear what the members of clubs say about the national WIA, what it should do and particularly, how the clubs and the WIA should relate to one another, and what should be the criteria for affiliation.

But what about clubs until we do work out that relationship?

The new Constitution does not simply cast aside the clubs that were members of a Division on 16 May 2004. The clubs that were members of a Division on 16 May 2004 are now "Provisional Members" of the WIA. That means that they will continue with a relationship with the WIA, until we have addressed and resolved the issue.

BT

The EH antenna continued

extended cylinders to allow high angle radiation. Ted says these antennas have very high efficiency and he is very impressed with the prototypes he has received.

Summary

The article follows on from my previous articles in Amateur Radio to include some theory on how the L+T and Star versions of the EH Antenna work.

I am sure that if you contemplate making one of these forms of antennas, or even purchasing one, you will ask which one should I choose. All of the antennas generate out of balance current on the coax feeder which, if you desire, can be stopped with a trap. Personally, I like the L+L version as it is the nearest arrangement to a balanced antenna. It goes against my grain to see one leg of a dipole directly connected to the shield of an unbalanced transmission line as in the L+T and Star versions. However

the dipole legs are isolated if you use a trap as I have discussed in a previous article.

Clearly the inventor (Ted) sees an advantage in getting rid of tuning capacitors and the problems of capacitor breakdown when using high power. (This is particularly important to him for work he is doing on antennas for high power broadcasting). Hence his more recent concentration on the Star antenna development.

However from an amateur constructor's point of view, I favour the opinion of George KA4Q that it is easier for the radio amateur to adjust some capacitor screws than taps on a coil. Furthermore, there is the construction problem of how to easily make the coil with adjustable taps.

References

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2. *More Information on the EH Antenna & how it has performed* - Lloyd Butler VK5BR - 'Amateur Radio', November 2003
3. *How much power is actually radiated from Longitudinal current in the EH Antenna?* Lloyd Butler VK5BR - 'Amateur Radio', Date??
4. *Various Articles on the EH Antenna* by Lloyd Butler VK5BR - Web site <http://www4.tpgi.com.au/users/ldbutler> or link from <http://www.qsl.net/vk5br>
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6. *The EH Antenna Web Site* (Sponsored by Ted Hart W5QJR) - <http://www.eh-antenna.com>
7. *Stefano (Steve) Galastri IK5IIR- Arno Elettronica* - <http://www.eheuroantenna.com>

BT

Test Equipment

Auttek WM1 2 KW
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Auttek RF1 HF
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Trying to receive the digital SW (DRM) broadcasts

By Brian Tideman VK3BCZ
24 Baird Street
Mugrave Victor a 3170

In the Feb 2002 issue of AR, there was a brief report "Digi Radio Experiment" encouraging amateurs to monitor the continuing DRM test transmissions. As I seem to be the only registered user in Australia providing reports to the web page of Global Reception reports, I thought that it might be useful to report on my findings so far.

What is DRM?

DRM stands for Digital Radio Mondiale which is the new digital radio standard recently accepted at WARC for use by SW Broadcasters. (Unfortunately, the USA is trialling an alternative system called IBOC and so may not be very interested in the project.) Test transmissions commenced in earnest early in 2003. The February report said that "Radio Amateurs and serious broadcast-band listeners have been invited to become part of the DRM Software Radio Project."

My interest had originally been aroused by reading an article about DRM reception methods in the December 2002 issue of Elektor magazine. Participation required a modest outlay (about \$100) for the decoding software which runs in the sound card of a PC. The difficult part for many is that the receiver needs to have an IF bandwidth with a flat response to at least 10kHz and an outboard converter fitted to convert the usual 455 kHz IF down to 12 kHz \pm 5 kHz, for processing and demodulating in the sound card.

I decided that I would not purchase the software until I knew that I could receive the DRM "noise" signal and had a suitably modified receiver available. After deciding that the FT100 was not suitable for modification to the IF, I decided that the 1986 vintage Yaesu Musem FRG 9600 VHF/UHF receiver was probably easier to modify. It also appeared to have a wideband AM filter which made it attractive. I subsequently found that the width of the wide IF was only 6 kHz. However, I then realised that I could switch out all the 455 kHz IF filters and rely on the 15 kHz filters in the 10.7 kHz section to define the bandwidth. This has worked out well, although

giving slightly too much bandwidth. The next problem was constructing an up-converter using a 53 MHz crystal together with a simple transistor mixer and the broadband RF amplifier from Drew Diamond's HF receiver/converter published in June 2002 AR. The final change was to arrange for the 12 kHz IF. I think I managed this more neatly than using the recommended outboard converter. I simply replaced the USB ceramic oscillator with an LC network (the L was from a Toyo IF transformer) substituted for the ceramic resonator and tuned to 443 kHz to provide the required 12 kHz offset. A reduction in the value of filter capacitor on the output of the ring demodulator was all that was required to finish the conversion to ensure that the output response was flat to about 19 kHz.

After downloading the software and running the set-up every Saturday and Sunday when the 15400 kHz signal was beamed especially to VK and ZL, I found that I could only demodulate the data channel "RNWB English - Information - Audio AAC mono 14.5 kbps". The DRM software gives a spectrum display (12 kHz wide approximately centred on 12 kHz) and also displays the measured signal to noise ratio. This was typically 8 to 10 dB. Decoding to program audio seemed to be occurring at a SNR of about 10 dB. Meanwhile a log file is generated showing the number of synchronising and audio frames recovered per minute together with the measured SNR.

The good news was that I finally achieved 18 dB SNR thereby ensuring a much needed "fading" margin, but only after making several more changes. First, I obtained a better sound card. (I found that the recommended Sound Blaster 5.1 card realised about 2 dB better SNR than

the original CMI card) Then I wired up a manual RF gain control. This improved the SNR by a notable 5 or 6 dB. From reading about some of the other stories of receiver conversions for DRM on the DRM web pages, I found that a slow AGC response was required to avoid distortion of the phase of the multi-carriers (the FRG 9600 AGC response much too fast at about 1 msec) and that the attainable SNR is limited if the local oscillator has



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a poor sideband phase noise response. I was not surprised to find when I used an audio spectrum display program to look at the IF output when receiving a test crystal oscillator, that there were hum and other low frequency sidebands present only 35 dB down. The hum components could be eliminated using a DC power supply. However, the residual phase noise (due to the older design of the frequency synthesiser) seems to be the main contributing limiting factor. I have therefore had to be content with the performance obtained so far with this receiver.

At one stage, I realised that my amateur multi-band antenna was end on to the Antilles in the Caribbean where the Radio Netherlands transmitter site is located. I decided to try a temporary dipole cut for 15400 kHz. Certainly the signal was then more than 10 dB stronger and mostly strength nine. However, tests with an external attenuator proved that changing the incoming signal by as much as 20 dB did not make much change to the measured SNR. This seemed to confirm that the deficiencies in my old receiver were responsible. Consequently, I am now testing a more conventional crystal locked HF down-converter which will drive directly into the 10.7 MHz filter stage of the VHF receiver. I am confident that eventually this receiver set-up will at least enable maximum DRM decoding performance (and SNR) to be obtained by eliminating

the sources of local oscillator noise.

Examples of reception can be found at <http://www.drmtx.org/analysis.html> and clicking on "view reception results."

Another interesting site for reception reports is the one run by a New Zealander, Chris Mackerell at <http://www.owdjm.gen.nz/chris/radio/DRM/DRM.html>

Here you can see his DRM spectrum screen dumps, his reception comments, audio and log files. He is certainly a very keen monitor of the DRM test broadcasts. His results have been excellent when the received signals have been of adequate strength.

What does the recovered audio sound like?

When the SNR is above the demodulator threshold of about 10 dB (when the digital stream of 14.5 kbps is being used in a 10 kHz bandwidth), the audio response is crisp and noise free. There seems to be a buffer of about two seconds being employed. When the signal fades below the threshold, the audio gracefully "shudders" on its way out. Other transmitting services use rates of up to 20 kbps which can support either stereo or mono and sometimes multi-channel data services. Several of these can be selected, when available, using the supplied software.

What is the future for DRM?

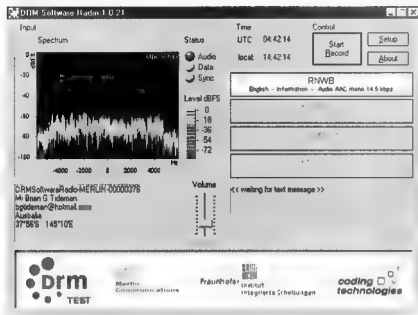
As for DAB and Digital TV, it all depends on what additional services the new system will provide. It is difficult to see how, in the countries where SW radio is depended upon for alternative world news, users will be willing to pay very much for new good performance radios that include the DSP for DRM reception built-in. It is understood that the DSP chips and radios will start to become available by the end of 2003. It is hoped by the DRM consortium and others, that mass production of cheap receivers will usher in this "new age of digital broadcasting" which eliminates the old bug-bears of phase distortion accompanying fading of the signal. However, I suspect that unless there is a considerable signal margin, that this distortion will at least partly be substituted with drop-outs. This might at least be more pleasing to the ear than the old analogue system. Only time will tell. And then there is IBOC from USA which is intended to be more "compatible" because of its mix of analogue with digital on the one signal!

If you are interested, look up the DRM web pages, or satisfy your curiosity as I did listening for the DRM "noise" signals according to the published broadcasting test schedules. The best signals in Australia and New Zealand are on 15400 kHz every Saturday and Sunday from 0430 to 0530 UTC. If you can afford to purchase the software, then find a suitable wideband receiver that can be modified to provide the 12 kHz IF output and have a listen.

If you are serious enough to try decoding a DRM broadcast on the HF bands and do not have a receiver with relatively flat 10 kHz bandpass, I have several 12 kHz bandwidth ceramic filters type CFW455F available. Please enquire by email to bgtideman@hotmail.com.

Also interesting is that digital broadcasters in Australia might soon be allowed to use the digital systems' multi-channel capabilities. You can see from the screen dump that the DRM system also allows for, and is indeed sometimes utilising, multiple programme channels and even stereo audio. There is usually a text message visible when the SNR is sufficient (greater than about 11 dB) to allow audio decoding.

Happy DRM-ing!



EGARC at Point Hicks

By Linda Stanford VK3VLS

East Gippsland Amateur Radio Club made the journey to Point Hicks Lighthouse on the weekend of August 16th and 17th, 2003 to participate in the International Lighthouse Weekend. During the weekend, amateur radio operators all around the world travelled to various lighthouses and attempted to make as many contacts as time and conditions permitted. There were operators working in approximately 45 different countries at over 290 lightstations, including 25 lighthouses in Australia.

The trip to Point Hicks was a new venture for the club and proved to be very successful. Six members and one very junior member made the trip to Point Hicks. The first to arrive, Rob VK3EK, set up an inverted L on two squid poles with an auto tuner and established communications on 80 metre. This was followed by a J pole which gave communication on 2 m FM through the local FM repeater at Mt Nowa Nowa. Using the club call sign of VK3EGC, Rob attempted to make contact with operators who were also setting up for the Lighthouse Weekend as well as other club members who were still on the road to Point Hicks. Battling poor atmospheric conditions, communication was at times very difficult and all members hoped that Saturday would show an improvement.

One highlight of the weekend was spotting a passing whale that obligingly approached within a few hundred metres of the tip of the Point, giving members a clear and close-up view of a mature humpback whale.

The base was at one of the historic assistant lighthouse keepers' quarters literally in the shadow of the towering Point Hicks lighthouse. This lighthouse, built in 1890, is the tallest concrete lighthouse in Australia and is positioned at the point where Captain Cook's lieutenant, Zachary Hicks, first sighted Australia in 1770. EGARC members set up two workstations in the enclosed north-facing veranda that proved to be a wonderfully comfortable and sunny spot, handy to the kitchen and all civilised amenities.

At midday Saturday, the event officially started. By this stage, members had set



Point Hicks Lightstation: EGARC base was in the house on the right-hand side.



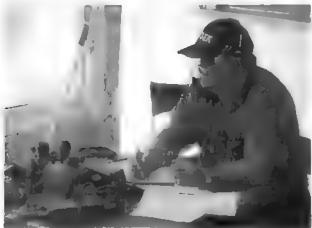
East Gippsland Amateur Radio Club members at Point Hicks:
L - R Melanie, Des VK3DMP, Rob VK3EK, Maurie VK3VLR, Mark VK3MOA with Andrew in front.

Talking Lighthouses

Looking back at ILLW 2003



Des VK3DMP making some running repairs



Rob VK3EK operating at Point Hicks Lighthouse base



Setting up antennas at the EGARC base at Point Hicks Lighthouse



Point Hicks Lighthouse and EGARC base for International Lighthouse Weekend.



Rob VK3EK and Maurie VK3VLR solving a small technical difficulty

Working in the Light

The East McCrae Lighthouse – AUS-067

The Cape Schanck Lighthouse – AUS-045

Two years ago, whilst scouting around for lighthouses with suitable venues to operate from, I came across the East McCrae Light and was immediately drawn to it as a candidate for activation.

The unpredictability of the weather and our reluctance to brave the elements should the worst conditions eventuate ruled out an open air operation, so the field of "candidates" was somewhat narrowed and it looked to me that McCrae would suit our needs admirably. Its proximity to the McCrae Yacht Club, with all the potential attributes that it had to offer, providing of course the Club was amenable to our proposal, had nothing whatsoever to do with its selection. Although cynics among you may beg to differ after reading of our expedition.

Glenn VK3CAM and I had already decided to team up for our third ILLW, and Marty VK3MF and Joe VK3BKI (both veterans of the Troubridge Island Light expedition last year) joined us for McCrae/Cape Schanck.

With our arrangements confirmed I registered two lighthouses on the ILLW participants' website – the McCrae Light (AUS-067) under my call VK3EMF and the Cape Schanck Light (AUS-045) under Marty's call VK3MF.

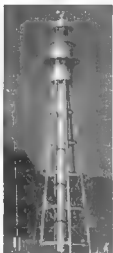
The two Cushcraft R5s were erected at opposite ends of the building, one fixed to some scaffolding and the other perched on top of Marty's Land Cruiser and guyed. The G5RV was strategically raised up as high as we could get it, initially using a squid pole as the support mast, but as the wind picked up it

tended to bend and roll around considerably so we moved it from the car park onto the lawn in front of the Club. The vertical for 2 metres was mounted on the balcony handrail and all the cabling was channeled into the club rooms... we were ready to roll.

continued next page



Carl Schlunk VK3EMF
September 2003



East McCrae
Lighthouse

EGARC at Point Hicks *continued*



Des VK3DMP operating at the base with Rob VK3EK reflected in background

up two triband HF antennas to work 20 m, 15 m and 10 m. The rigs used were Icom 706 Mark 2Gs and, thankfully, conditions on 80 m had improved vastly from the difficult conditions experienced the previous night. The world boomed in from lighthouses all over the world.

By the close of the weekend, contact had been made with light stations in all states of Australia except Western Australia and the ACT. International contacts were made with Lithuania, France, New Zealand, Cuba, Israel, Japan, Asiatic Russia, Denmark, Algeria, Slovenia, Estonia, Hungary, Switzerland, Portugal, Germany, Austria and the USA. Most of these contacts were participants in the International Lighthouse Weekend but some were interested home station contacts who became involved in the Weekend although they were not stationed at a lighthouse. Two operators worked simultaneously, with frequent changeovers to enable everyone to enjoy the glorious weather and the unique environment at Point Hicks. One highlight of the weekend was spotting a passing whale that obligingly approached within a few hundred metres of the tip of the Point, giving members a clear and close-up view of a mature humpback whale.

Members who participated were Rob VK3EK, Des VK3DMP, Mark VK3MOA, Linda VK3VLS and Maurie VK3VLR together with Melanie (Mrs Des) and Andrew (junior Des).

Following the success of this venture, members are already planning a return to Point Hicks to participate in the 2004 International Lighthouse Weekend.

Talking Lighthouses

Looking back at ILLW 2003

"Will we do it again? You bet we will, it's just a matter of which lighthouse we select to activate next year."

Two metre checked out OK, as did the FT7 and the FT757 and last, but by no means least, Glenn's "Big Bertha" IC 775 was operational too.

What an experience day one was, the weather was quite splendid, the hospitality superb, the company was great with the added bonus that band conditions were pretty good as well. Four out of four isn't too bad! It was as close to perfection as we could've hoped for.

Glenn, Marty and myself shared the microphones while Joe worked the key. It was a pleasure to see an ex merchant marine radio officer in action – almost poetry in motion.

The day wore on and we had to make the best of the bands before the RD Contest began, as we knew from past experience that once it got started it was going to be tough going for the ILLW participants. During the day several members of the Yacht Club dropped in for a chat and showed a lot of interest in what we were up to. Interestingly, a couple of them were not only hams but ex members of the EMDRC whom Joe knew.

As dusk approached, the yacht club working bee wound up for the day and so did we. It was great to be told that if we wanted another crack at it in the morning someone would be on deck to open up for us. We accepted the offer, indicating it would only be for a couple of hours as we planned to activate the Cape Schanck Lighthouse on the way back to Melbourne.

On the recommendation of the Commodore we booked into the Admiralty Motel for the night.

The next morning as hunger pangs set in, the little café across the street raising its shutters for the day's trading looked mighty attractive. We sat down to a large breakfast with some very good coffee to go with it.

With the batteries recharged we traipsed back to the Yacht Club, which by now was open, and set everything up again for a couple more hours operating. Not a great deal of activity took place in the morning session and pretty soon we were packing up again and looking forward to Cape Schanck.

By the time we got to the yacht club,

the wind was stronger and actually blowing a little sand around. However, undaunted, we got the FT7 and the FP4 power supply set up on Marty's tail gate and fired up the Honda generator. One of the Cushcraft R5s was again mounted and guyed atop Marty's beast and in no time we were ready for another session. This time it was the "real McCoy" as far as field operations are concerned. We soon found out that no operation is as simple as it should be; the generator was not only generating, but also producing a hash problem in the FT7. We tried moving it further away, two extension leads away in fact, but there was still no change. We realised that there was nothing else we could do and switched it off, resorting to a 24 AH battery that Marty had had the foresight to include.

After a few hours we moved on to Cape Schanck. We had trouble making contacts from Cape Schanck and in the end resorted to CW only, and even that was very marginal. Two hours of wind and worsening conditions forced us to pack up yet again, this time for the trip home.

I guess you could sum up the weekend away by saying we had a lot of fun, met some terrific people and had a great time. The fact that the ILLW is not a competition, but a get-together of like-minded amateurs around the world to celebrate centuries of the great work done by lighthouses and their keepers in keeping mariners safe, made it all the more enjoyable.

We finished the ILLW having contacted eighteen lighthouses around the world



The Gruesome Foursome
This was taken inside the McCrae Yacht Club
L to R in the pic: Joe VK3BK1, Carl VK3EMF, Glenn VK3CAM & Marty VK3MF.



Carl VK3EMF presenting Guy Bancroft, Commodore of the McCrae Yacht Club, with an EMDRC Banner as a token of our appreciation.

as well as many "ordinary" amateur operators. This year (2003) there were some 370 registered lighthouse stations participating in around 48 countries, up slightly on last year.

Will we do it again? You bet we will, it's just a matter of which lighthouse we select to activate next year.

Our thanks go to Commodore Guy Bancroft and members of the McCrae Yacht Club for the hospitality and assistance that their members extended to us. We were made to feel most welcome and were given the full, unconditional use of their facilities.

■

The circuits of the modules used to generate the 1.65 MHz lower side band signal are set out in the diagrams. The power supply for the circuit is a 12 volt car battery. The 1.65 MHz signal is mixed with a 5.35 to 5.65 MHz signal to produce a 7 to 7.3 MHz final signal. The circuits for this mixer and the subsequent linear amplifier are still undergoing refinement and may be published later.

Module 1 is a straightforward crystal oscillator that uses the original crystal salvaged from the dead transceiver. This circuit is built in a small box of soldered-together pieces of copper clad circuit board. Likewise the audio amplifier is a very conventional circuit. The microphone is from an old Yaesu

FT 301. The third module is the double side band mixer. This uses a 74HC04 chip to convert the sine wave output of the oscillator into two 180 degree out-of-phase square waves. These square waves operate the switches in the 74HC1066 chip and result in the audio signal being applied to the output transformer alternately as a positive and negative signal 1.65 million times a second. The result is a D.S.B. signal with no carrier. No problem was found with mounting the two 74HC chips on their backs with the leads pointing up, those leads that were to be earthed were simply gently bent down and soldered to the copper clad board.

The output transformer of the D.S.B. mixer consists of two 37-43 toroid cores

stacked on top of each other with the windings consisting of 30 turns of trifilar wound 30 AWG enamelled wire twisted at a rate of about one twist per cm.

The crystal filter module uses a Hy-Q QF01602 crystal filter from an old Codan 6924 transceiver. That filter was popular in many SSB transceivers produced 15 to 40 years ago. The Hy-Q website does not list this filter which is clearly obsolete so it was not possible to determine in advance the correct terminating impedance. The arrangement shown in module 4 however worked satisfactorily provided the L.S.B. output was fed into a high impedance following stage such as the gate of a field effect transistor. When tested with a sweep generator and oscilloscope the filter displayed

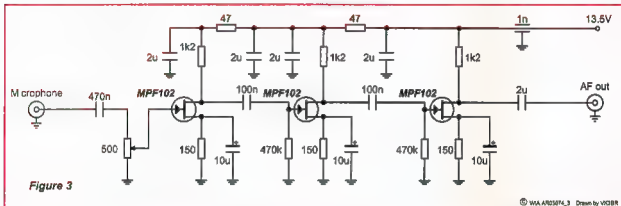


Figure 3

© WIA/RSB/F4_3 Drawn by VGBR

Fig 3 - Module 2 - AF amplifier.

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- RG8/U Belden 9913F7 High Flex Low Loss @ \$5.55 per metre
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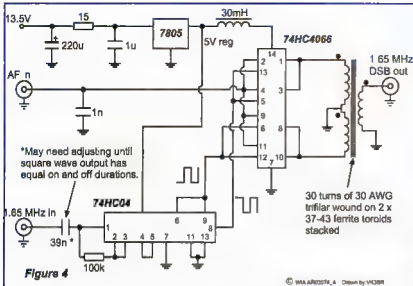


Fig 4 - Module 3 - DSB mixer.

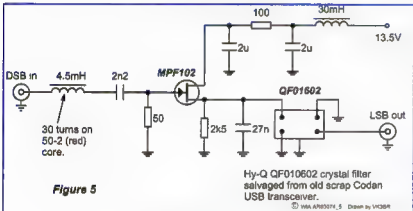


Fig 5 - Module 4 - Crystal filter.

steep sided response with about 1 dB of ripple.

The QF010602 was used in upper side band equipment and this transmitter, being for the 40 metre band is a lower side band device. The equipment it came out of generated a 1.65 MHz lower side band signal then mixed that with a frequency 1.65 MHz higher than the final signal. This process turned the lower side band signal into an upper side band signal. By mixing the 1.65 MHz lower side band signal with a frequency 1.65 MHz below the final frequency the final signal remains lower side band.

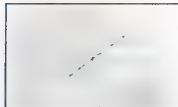
The photographs show the modular construction with coaxial interconnections. The parts for this part of the transmitter are all readily available from Truscott's Electronic World in Melbourne except for feed through capacitors, which were taken

from old junked equipment. With careful decoupling of the stages using radio frequency chokes and capacitors they are probably not needed. In the rig I am using the circuit described above is housed along with the second mixer and V.F.O. in an aluminium cabinet. The output of the second mixer is connected by coaxial cable to a second cabinet, which contains a valve driver and power amplifier stage. These two cabinets are separate to prevent heat from the valve stages heating the oscillators and so causing drift.

I would like to thank Drew Diamond whose articles inspired me to take the plunge and make my own gear, and Peter VK6APZ who proved a great source of old parts and who patiently listened to my initially feeble signals as the project progressed.

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Simple home brew PCB artwork

by Malcolm Haskard VK5BA

Age often reduces the ability to see fine detail and to hold a soldering iron or any tool steady. Thus it becomes more difficult and frustrating to correctly hand wire electronic circuits on general purpose prototype boards (consisting of arrays of holes on 0.1" spacing) and fault find them. Personal experience has shown that the success rate is much higher and the frustration less when a circuit specific PCB is used. This means you are restricted to kits or if you like designing your own circuits you have to produce your own boards.

Some years ago I decided to check out the Microsoft Works drawing program on my computer to see if it would suffice for home PCB design. Although a primitive drawing tool it can produce acceptable quality single and double sided PCB artwork at scale and further, is very simple to use. Here is how it is done!

Requirements

Five potential problems need to be solved, namely available grid size, how to draw both pads and tracks, adding lettering and generating a simple library of devices.

a) Grid size

You can select Metric or Imperial (US) units (Control panel; Regional settings; Measurement system), but I normally use the latter. Here the grid size available is in thousands of an inch increments although 10 thou steps is more realistic when a hand mouse is used. If snap to grid is switched on then the grid is much coarser, typically 1/12 inch steps (0.083"). I tend not to use snap to grid, but simply place the viewed X and Y grid lines on the spot where a pad is

needed, much like cross hairs, and the pads will lock to that grid line position. With text, spacing depends upon the font used and this fact can be put to good use as will be seen next.

b) Pads

The easiest way of doing pads is to use fonts type where the letter "o" (upper and lower cases) or zero is the desired shape (text instruction set). I found four possible fonts of interest and these are shown in Figure 1. You may find others more suitable in the font file on your computer.

The shape and size of the pad may be changed using lower or upper case, plain or bold print or font size. Often I select Newfoundland for it gives a circular pad with a largish hole in the centre for drill positioning, even though there is no difference between upper and lower case "o". As a shortcut, using 12 font size pads can be placed on approximately 0.2" spacing if a space is placed between letters, appropriate spacing for when artwork is done at x 2 size. Gilbert Ultra Bold provides more pad copper area. The other two fonts give greater spaces

for between pins of an IC. To solve the larger oval shaped drill hole, simply place a smaller size Newfoundland "pad" over the top. When laying out pads it is more convenient to set the (text) cursor set to the centre position rather than the usual left side for text.

c) Tracks

Lines of various styles and points are available (draw instruction set). At x 2 size artwork 4 point is used for tracks in the X and Y direction with 2 point for any diagonal lines (Figure 1). Earth and other large copper areas can be undertaken using the draw rectangle shape and then fill in. When actually laying out the board I initially use the hair line track width option and only when happy with the layout go to the 2 and 4 point track widths.

d) Lettering

Simply select a font to your liking. I normally use Arial size 10 font, going to size 12 for board identification details.

e) Library

Very few shapes are required. My library consists of 8 pin DIL package, transistor packages of 3 and 4 pin as well as several two lead component pads of different spacing (Figure 2). These I keep in a separate file called PCB_LIB.wps and using the copy instruction they can be transferred from this file to any new file containing the layout being undertaken. The horizontal DIL packages are made up of a row of pads using either the Text instruction (Newfoundland font of size 12) alternately typing in an "o" and a

Font type	Printed, lower case "o", Upper case "O", and Zero			
	Font size 12	Font size 14	Font size 18	Font size 24
Bahamas Heavy	o o o	o o o	o o o	o o o
Gilbert Ultra Bold	● ● ●	● ● ●	● ● ●	● ● ●
Kabana Bold	o o o	o o o	o o o	o o o
Newfoundland	o o o	o o o	o o o	o o o

Figure 1 - The easiest way of doing pads is to use fonts type where the letter "o" (upper and lower cases) or zero is the desired shape (text instruction set). Here are examples of four possible fonts of interest.

single space or individually placing them using the grid lines. The latter is a more accurate method. After doing one line of pins, this is duplicated using the Copy and Paste instructions, the second line spaced at 0.6" distance away. A "1" can be typed by pin 1 (Arial font size 10) for identification, but it is sometimes simpler to add this later while undertaking a particular board layout. The two pad lines and "1" are grouped by highlighting the three simultaneously (Point and click to each with the shift key down) and using the Group instruction. If the Text instruction method is used it is difficult to have a vertical DIL package (Text instruction giving 0.2" spacing only works in the x direction) so the rotate instruction for DIL packages does not work correctly.

The art work does not have to be drawn at x2 size. Many have been undertaken at x1 and while there is a reduction in precision, it does allow direct transfer of the layout to a PCB.

Printouts and "Negatives"

The output form from the drafting phase depends on the board process that has to be interfaced into. Where a positive photo resist is employed a positive artwork is required (copper is printed black). Various grades of tracing paper are available so if x1 artwork is drawn then this tracing paper printout may be adequate to use as the positive. Likewise there are now overhead transparency materials for direct printing from inkjet or laser printers and again positives can be printed direct onto a clear film. The method I normally used was to

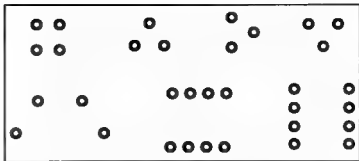


Figure 2 Simple library for circuits drawn at x2 size. Two terminal devices various pad spacing, 4 and 3 pin transistors and 8 pin ICs

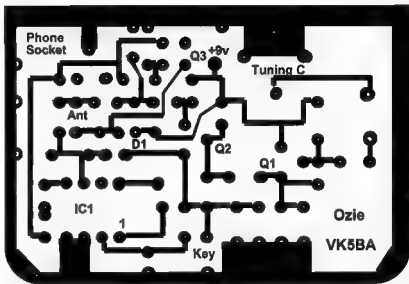


Figure 3 - Ozle, the Australian version of SPRAT magazine's QRP rig called "Pixie". Side tone and frequency crystal pulling features have been added. The phone socket and tuning capacitor mount directly on the card. Trial layout is at x2 size. Circuit fits into half of a "Strepails" tin. Layout is viewed from the copper side.

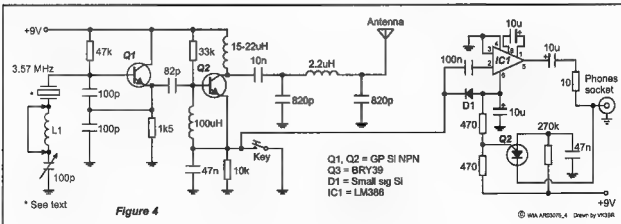


Figure 4 - Circuit details of trial QRP 80 m transceiver, Ozle.

In Charlie's Way

A short story about a ham, his mates and the CW receiving exam

Ross Fraser VK2WN

Part 3. 'Battler's test'

The next morning Colin woke up bright and early - before the alarm went off, so it must have been before a quarter to six. The day looked promising, the sun was shining and the magpies were carolling outside. He walked into his kitchen and turned on the kettle and leaned against the kitchen bench yawning and scratching himself. His second operator, Tiger the cat, meowed outside to be let in. As Colin opened the door to let Tiger in the cool morning air struck him suddenly and made him shiver. Almost robot-like he went to the cat biscuit tin and poured some biscuits into Tiger's feed tin.

With his coffee made he wandered into his shack, actually a sunroom adjacent to the kitchen, and switched on his HF radio and also the heater switch. The frequency was still on the early morning chat frequency, where it had

been left, but there were no voices, just a gentle hissing and crackling sound. Colin wandered back to make his coffee and cereal and heard some one talking on the radio. But there was something different about the voice. He recognised it, but it was too clear to be coming from the shack. He shook his head and wondered what was going on. Then he looked down and saw Tiger wandering off to the door.

The figure of Charlie was emerging through the door and his very presence took Colin by surprise.

'Charlie what the hell are you doing here at this hour? You frightened ten years growth out of me....and you scared Tiger...' At that moment Tiger was affectionately rubbing against Charlie's leg.

Colin started to smirk and said: 'Well nothing would frighten that cat....a

pair of 6146s could blow up when he's sleeping on the chair in the radio-room and he wouldn't even flinch'

'Well I thought we could get started with the Morse practice'

'You know I've got to be at work in a few hours'

'You work too hard' Charlie said sarcastically, before saying 'Today is Sunday'.

Colin looked shocked and realised that he was still half-asleep. 'Oh' he said.

It was then that it dawned on Colin that it actually was Sunday - and that was why the radio was so quiet this morning - the net doesn't start till 7am on a Sunday. Colin sheepishly sipped on his coffee and then wandered over to the kettle to make one for Charlie.

to be continued

Simple home brew PCB artwork *continued*

a printout. Most copy shops will do overhead transparencies on a Xerox copier and the x2 reduction can be done at this stage. The process is crude and there are gaps in the black section of the transparency which could give a hair line gap in a track. Consequently two copies of the transparency are used (if a small board then multiple copies can be on the same page so only one transparency is made), one on top of the other, fixed together with sticky tape at the edges. The assumption is that it is unlikely that two gaps will occur at the same location so by combining two there will be no gaps in tracks. Looking through the combined positive at a light to check this is always a wise move.

Where a negative is required a layout using reverse fills must be used. While you can reverse a positive image on the screen I have not been able to get a negative print out. Therefore the simplest thing is to do the artwork with fills reversed. Initially make the whole board black and draw with white objects

A further and final step is to print an additional copy of the positive and in red Biro free hand draw where components go adding their values or parts number. This helps later with loading a board while it also provides a check of the layout prior to making the board.

Example

As an example Figure 3 shows the layout of a QRP rig based on the PIXIE circuit from the UK QRP magazine SPRAT (Spring 1996). The circuit here has been modified to include a side tone circuit and tuning, while the PCB has been made of a size to fit into half of a "Strepsils" tin. Called Ozie the circuit is given, with component values for 80 m, in Figure 4. The layout is viewed from the copper side.

With a 3.57 MHz ceramic resonator instead of a crystal no inductor is needed (a shorting link is required) as it can cover a large frequency shift - several tens of kilohertz. However, should a quartz crystal be used then you can

only pull such a crystal a few hundreds of Hertz below its stated frequency. Thus an inductor is needed to maximise the pull range. The inductor allows one to go higher in frequency than the crystal's stated frequency.

Conclusions

Although primitive, the Microsoft Works drawing routine can readily be used for producing single sided PCB artwork. With lateral thinking double sided boards can also be produced, eg group all pads so you can transfer the whole to produce a pad layout for the second board side to which tracks need only be added.

Technical editor's note

Several of the more useful fonts referred to in this article may not be initially available on some of the newer software versions in use today. To achieve the results described above, you will need to install the fonts needed, if not already available.

How to stop your bug from walking

Ted Miles VK2FLB

I'm pretty heavy handed when using my bug and for more years that I'd like to say, I've been sometimes holding it with my left hand when sending, or applying a little bit of spit under the rubber feet to get a better grip on the

desk.

So I came up with a simple idea (which may also be in use by others) that would enable my bug to act as if it was screwed to the desk, yet remain as if were floating.

Whichever medium you use as a base, it should be of minimum size but enough coming away from the bug area for the edge of your wrist to rest on and bear weight. Since most bugs will have wiring and screws on the underside, don't make the holes to suit the largest diameter of the tapered round feet, as the screw heads may not let the unit settle fully into the holes and would let the unit slop around when in use. Allow for a smaller hole initially, then ream out or drill larger holes until the unit sinks down and the tapered feet rest firmly in the holes, or drill holes in the base to clear the screw heads. **Note:** In all cases, the feet in the holes must be firm; no slop.

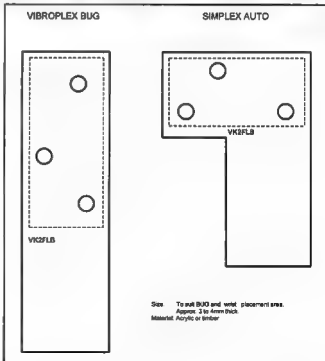
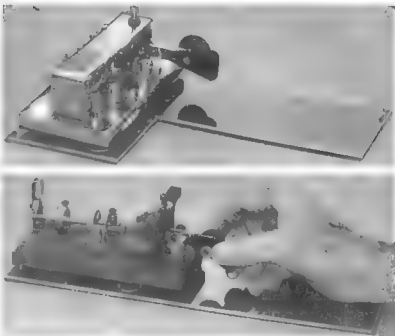
Cutting to size some black 'rubbery/plasticity' material for a mat under the base works well. This 'floating base' will allow you to use your bug 'single handed' comfortably, even on the front seat of a (stationary) vehicle.

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Andy VK3IV

Winding a helical whip antenna

Roger Graham (used to be) VK2AIV

Can you wind up a home-brew HF whip antenna that really works? Yes indeed. And it's easier than you think.

First there are some decisions to make. How long do you want the whip to be? Common sense says that a long whip will probably perform better than a short one (and it's true). But a 3 metre long antenna is a complete nuisance on the vehicle, and you may be surprised how well you can get out with a much shorter one.

The idea of course is to wind a suitable length of wire in some kind of spiral or helix, all the way up a fibreglass rod. But, how much wire? And how do you arrange for it to be resonant at your chosen frequency? And wouldn't it be nice if the impedance at the base was a neat 50 ohm?

The easiest place to start is with a discarded CB antenna, since it already has the usual metal screw fitting on the bottom (5/16 inch, 26 TPI). The tapered rod makes the calculations a bit slower, but the finished whip looks (and works) like a bought one. An alternative is one of those bright yellow fibreglass rods sold for supporting electric fence wires. They're 10 mm in diameter, and 1500 mm long. Cost about \$2 each when I bought some from a rural co-op store. Less convenient, because you have to make your own brass screw fitting for the bottom end, and glue it on with epoxy cement.

Now, how much wire? The basic formula is $(256/f)$ metre of wire, where f is the operating frequency in MHz, provided that the wire is wound onto the rod in the manner described below (see Ref 1). The procedure will give an antenna with a base impedance of about 50 ohm, and resonant very close to the design figure you choose.

How thick should the wire be? Thicker is better, We'll get to that in a minute.

Now pay attention and get this right. Measure the available length of fibreglass rod, and divide it into 9 equal parts. Mark the 9 portions clearly on the rod with a felt-tip pen. Let's agree to call the sections A, B, C, D, E, F, G, H and

I, starting at the bottom. The bottom section (that's A) will end up with only 1% of the total wire on it. The next section (that's B) will have 2%. Section C gets 4%, then D gets 6%. Section E has 7%, and section F gets 9%. Add these up and the total is only 29% of the wire. That leaves 71% of the wire, which will be close wound to fill the top three sections G, H and I.

With that understood, you can now calculate the thickest possible wire to use. It's easiest to explain with actual figures. Suppose you choose to make your 20-metre whip resonant in the middle of the band, about 14.18 MHz. The basic formula gives the required length of wire a $(256/14.18)$ metre, which is very near 18 metre of wire. And 71% of this will be (18×0.71) which is 12.8 metre. Suppose further that your fibreglass rod was one of the electric fence kind, 1500 mm long, and you decided that the available length for winding was say 1450 mm.

When you mark off the rod into 9 equal parts, each one will be $(1450/9) = 161$ mm long, so the top three sections G, H and I will total $(3 \times 161) = 483$ mm. And since the rod is 10 mm in diameter, the circumference will be $(10 \times 3.14) = 31.4$ mm. For now, take this figure as the length of 1 turn of wire.

See it coming? You have to wind 12800 millimetres of wire, close wound, onto sections G, H and I. And since each turn is 31.4 mm long, that means $(12800 / 31.4) = 408$ turns to be fitted into a length of 483 mm. That means each turn can occupy $(483/408) = 1.18$ mm, and that is the thickest wire you can use. (For example, 18 AWG wire is 1.02 mm diameter.)

If you're a maths whiz, you'll realize that the length of one turn using wire of this thickness will not be the figure we calculated (31.4 mm) since the diameter of each turn, measured to the centre of the wire, will be $(10 + 1.18) = 11.18$ mm,

Section Number	Length of section (mm)	% of wire in this section	No of turns in this section	Pitch mm
G, H and I (top three sections)	161 x 3 = 483	71	370	Close wound
F	161	9	47	3.5
E	161	7	36	4.5
D	161	6	31	5
C	161	4	21	8
B	161	2	10	16
A (bottom)	161	1	5	32

Table 1

So the close-wound section will end up with fewer turns than you expected, and less inductance too, and the finished whip will resonate a bit higher than you planned. (Sure enough, it does too. Mine came out at 14.9 MHz.) So be prepared for a bit of cut-and-try at the end of the job. I'll explain later.

Table 1 above gives the actual figures for construction of a 20 m whip wound on a simple cylindrical rod.

In real life, you'll probably be using enamelled wire salvaged from your junk box, and making do with the nearest practical size available. Before you go out and buy expensive wire, try dismantling various brush-type motors (a vacuum cleaner is a good place to start). The field coils yield lots of top-

quality undamaged wire, and you may be lucky.

Now for the actual winding. Rule up a little table like the one given, and work out the number of turns you'll need in each section of the rod. The figures given in the table are worked out for the same example that we began with, but using available wire of diameter 1.0 mm. Knowing the number of turns to go in each section, you can work out the pitch of the winding and mark little dots on the fibreglass rod to guide your wind on the wire. It's a fiddly job, but much better than trying to guess the spacing then spreading the turns out

later. If you wind the wire on tightly, as you should, it's hard to push the turns about afterwards.

All ready? Measure out the length of wire. Solder one end onto the metal base of the whip. Tie the other end to some suitable object 18 metre away. Have a few lengths of sticky tape on hand, and some spring clothes pegs, to anchor the winding when the phone rings. Now hold the rod horizontally from left to right in front of your body, and rotate it slowly with fingers and thumbs as you advance along the wire while you wind the turns firmly and neatly into place. Add a bit of sticky tape every so often in case things come unstuck.

All the whips I've made (maybe five or six) have come out near to, but not

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exactly on, the design frequency. So how do you make adjustments?

- (1) A short brass upstand added at the top of the whip will lower the frequency. A 10 mm upstand lowers the frequency of a 20-metre whip by about 150 kHz. If you've provided a little threaded socket at the top of the rod, you can solder the end of the wire to it, and screw in various lengths of extra metal for fine tuning.
- (2) What if the initial frequency is too low? Removing turns is surprisingly ineffective. You have to take off lots and lots to raise the frequency just a little, but it does work. So you can remove turns at the top.
- (3) Much more effective, if the frequency is too low, is to slacken off the tension a little and slide the close-wound portion towards the top, if there's room. If your fibreglass rod is tapered, this process will tend to loosen the windings, so be prepared with the sticky tape.

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nameat@bigpond.

If you're trying to measure the resonant frequency of the whip with only your transmitter and a SWR bridge; well, good luck. But if the resonant frequency is somewhere well outside an amateur band, it isn't easy. Much simpler with a dip oscillator and a little RF bridge, as described in an earlier AR article ("An RF Bridge for Antenna Measurements").

When most of the adjustments are made, set the whip up on the vehicle and connect it to the XCVR via a SWR meter. Measure the SWR at various points across the band. (The helical coil of wire at this stage is still stuck down with sticky tape. The heat-shrink tubing comes later). There are some traps for the unwary here. If you make the final adjustments under an overhanging tree, expect the resonant frequency to be a bit higher when you come out into the open later (less top capacitance). If the whip is mounted on the top of a camper-van "pop top", the resonant frequency will be different with the pop-top up. And if you adjust the whip on vehicle A, then move it to vehicle B, the resonant frequency may be different. For example, a whip measured at 14.35 MHz on my Mitsubishi van roof, measured 14.1 MHz on a Toyota bull-bar.

If you make the original whip resonant near the high end of the band, you can easily add little screw-in upstands to the top to bring its frequency down, spot on, to wherever you choose to operate. I have a set of little screw-in pieces, each 10 mm longer than the next, to a total of about 40 mm maximum. Expect SWR values of about 1.2:1 or 1.3:1 at resonance. If you don't provide any adjustments, a 20 metre whip set up for minimum SWR at 14.2 MHz will have an SWR of about 2:1 before you reach the band edge on either side. So providing a range of little upstands seems a good idea.

The whip I've used most was set up for 14.116 MHz, the frequency of the Australian Travellers' Net. In practice, for operation from the CW end of the band up to about 14.25 MHz, it wasn't necessary to fiddle with the tuning at all.

Adding the heat-shrink tubing comes last. It comes in 1-metre lengths in a variety of colours and diameters (DSE and other places). It doesn't seem to alter the resonant frequency much, and in any case you can adjust it with those little screw-in bits, can't you?

Oh yes.. What if your fibreglass rod is tapered, not cylindrical? The calculations for the close-wound sections are much the same, but this time measure the diameter of the rod in the centre of the close-wound part (that is, the middle of section G) and take that as the average diameter for those three sections (G,H and I). And when working out the number of turns for each of the sections A to F, measure the diameter of the rod at the centre of that section, then calculate the average length of a turn for that section. A tapered rod looks much neater and more professional, as you'd expect.

Case history: an actual example

The table shows actual calculations made when winding a whip on an electric fence spreader of diameter 10 mm, using wire of diameter 1.0 mm. The length of 1 turn was taken as $(11 \times 3.142) = 34.56$ mm, so the total number of turns would be $(18000 / 34.56) = 520$

With an available rod length of 1450 mm, each of the 9 sections was $(1450 / 9) = 161$ mm long.

Wire of diameter 1.0 mm was used because that was what I had on hand, though 1.3 mm diameter would have been ideal for the close-wound section. And sure enough, the extra inductance due to having the turns spaced too closely at the top made the whip resonant somewhere near 12 MHz. The top section was spread gently until the wire was no longer close-wound, but about 1.3 mm centre-to-centre. The whip was now resonant at 14.1 MHz. Spread the turns just a little more... now 14.3 MHz. An adjusting screw of length 15 mm at the top lowered the frequency to 14.1 MHz.

References

1. Amateur Radio 1977, in a "Forward Bias" feature. Title and author details have not survived the successive photocopying.

I have adapted the original design for my requirements, ie. single band, with 50 ohm impedance to eliminate any need for a coupler.

✉

The ACA Review of Amateur Service Regulation: a look at the outcomes

A personal view by Jim Linton VK3PC

The biggest ever reshaping of amateur radio is set to occur early in 2005 following an exhaustive inquiry by Australian Communications Authority (ACA) which released its 'Outcomes' report a month ago.

The ACA in making its findings public is welcoming comments before moving to the next step of implementation that mostly requires amendments to the Amateur Licence Condition Determinations.

A major victory for the amateur radio fraternity through the review was to have the ACA seriously re-think its proposed draconian "no interference policy". More about that later in the article.

The ACA is still to announce exactly how it intends to move towards the outsourcing of amateur certificates, examinations, the issuing of call signs and other administrative tasks.

The ACA began its inquiry in August 2003 by issuing a discussion paper and holding a series of public meetings. The exercise was primarily aimed at addressing the changes to the International Radio Regulations that resulted from the World Radiocommunications Conference in June and July 2003.

The end to mandatory Morse code tests for amateur licensing meant that the current five licence types had to be restructured. This was an ideal time to also consider the WIA's request for the introduction of a new entry level licence.

Some two-thirds of respondents to the ACA inquiry supported a new licence type for the benefits it promises in stimulating the declining interest in amateur radio. It needs to be made more relevant to today's society and attractive to a wider range of people.

Foundation licence lacks attractiveness

The ACA has proposed a new licence that is likely, in the opinion of the author of this article, to create a sub-group of people who will not be 'true' radio amateurs in accordance with the ITU definition of the Amateur Service.

The Foundation Licence, as currently proposed by the ACA, is starting to be

seen by some sceptics as a telephony operator's permit.

To market amateur radio it must be treated like a product that can compete with other recreational activities on offer. We live in a digital age and restricting the new licence to voice and hand-key Morse code does not face reality.

A straw poll of secondary school students has found little interest in the proposed Foundation Licence. Why? They are a digital generation into email, mobile phone text and images, and computing generally.

A highly restrictive Foundation licence is unlikely to be an attractive entry point and stepping stone to a higher grade of licence. The failure of the Australian Novice-Limited licence is a lesson of history. The now discontinued Novice licence in New Zealand, introduced later than in VK, also failed for much the same reason.

The non-radio amateurs who responded albeit in small numbers to the ACA inquiry, and others showing interest want a licence that gives them a "taste" of what the wonderful hobby of amateur radio has to offer.

The ACA, rather than specifying voice and Morse code for the Foundation Licence should have stated maximum bandwidth that would allow various transmission emission types or operating modes.

Even the Citizen's Band licence seemingly gives more scope for experimentation. CBers are transmitting data and have a higher transmit power than the proposed 10 W for the Foundation Licence.

While on the issue of power, the ACA

rejected the call for a 100 W PEP level for the new licence, although the power level had majority support. This misses the opportunity to market the hobby to current HF radio users in 4-wheel drive groups and the yachting fraternity who are using similar power levels.

The 10 W limit for Foundation licence holders will also restrict their use of mobile and portable radio transceivers. The experience with 10 W mobile into voice repeater is often inferior due to lower signal strength and flutter.

In an HF mobile operation that universally requires the use of a compromise antenna system 10 W is not sufficient. Taxis, couriers, emergency services and a host of land mobile users run higher power – so why can't the Foundation licensees?

Sure there is new amateur radio equipment that has 10 W output, but to use its availability as part of the justification to relegate the Foundation licence to low power is not justified.

The ACA has not heeded the arguments in support of 100 W. The average amateur station now runs 100 W and, on the ACA admission at its public hearings, only a few hams are involved in alleged interference claims a year.

There are also family implications. Why should the parent of a Foundation licensee have to buy a 10 W rig for their

Radio amateur rage

In excess of 99% of the 1300 submissions to the ACA inquiry said "no" to the ACA's proposed 'no interference policy'. Some 19% only talked about the proposed policy and nothing else, while probably a total of five or six said it was a good policy and urged the ACA to introduce it.

NOTE

The views expressed in this article are those of the author, and do not necessarily reflect official WIA policy

child instead of sharing their existing station transceiver?

The common way of getting on air is to buy a second hand transceiver and the predominately used rig is the standard up to 100 W HF transceiver, with very few of the modern 10 W sets available.

If there are genuine concerns about the potential for interference and EMR issues held by the ACA, then why not a 50 W limit? Inadequate justification has been put by the ACA in support of its rejection of 100 W, which is not high power.

Lifting the restriction on modes, and the power level for the Foundation licence, will open new horizons of experimentation for the entry level licence, and strengthen the amateur radio fraternity by providing it a new generation of radio amateurs.

ACA's no interference policy

Feeling the full force of "radio amateur rage" the ACA has stepped back from its "original" no interference policy that could have shut down blameless radio amateurs involved in lengthy disputes over alleged interference.

The ACA has conceded that its original approach lacked fairness. Rather than concentrating on the Amateur Service it will now take a general interference management approach across all radio services.

The ACA's Radio Consultative Council (RCC) will task a sub-committee to examine the issue in greater detail and make recommendations.

In theory the ACA still wants to be able to restrict the operation or close down an amateur station because of an unresolved interference complaint. But it is indicating a generally less rigid approach than its original proposal.

The RCC, which includes a representative of the WIA, will develop interference resolution guidelines for inclusion in the Amateur Licence Condition Determinations by the second quarter of 2005.

ACA review outcomes at a glance

Licence restructure

Three tier licence system – Foundation, Standard (Novice-Limited and Novice), Advanced (Limited, Intermediate and Unrestricted)

- Foundation licence to have six frequency bands - 3.5, 7, 21 and 28 MHz plus 2 m and 70 cm, 10 W transmit power, phone and CW only. Commercial transmitting equipment only
- Standard licence – the Foundation licence bands plus 20 m, 6 m and three microwave bands, 100 W and all modes
- Advanced licence – as for the current Unrestricted licence

Syllabus and assessments

- Licence syllabuses to be restructured in line with international practice
- Licence syllabuses to be updated to include electromagnetic radiation (EMR) and more emphasis on interference avoidance, cures and resolution practice
- Foundation licence to have a combined multi-choice exam paper covering safety, operational and regulation issues
- Practical assessments to be passed by candidates for all three licence types
- Either written examinations or progressive assessment method by accredited bodies will be allowed
- The knowledge of Morse code will be deleted from licence syllabuses
- No (minimum) age limit will apply to holders of any of the three licence types
- The ACA will continue to verify the operational and technical qualifications of any person wishing to operate an amateur station

Callsigns

- Continuance of callsign suffix blocks that identify licence type, and generally maintain the system of state-based geographic numeral indicators
- Introduction of four-letter callsign suffixes
- Australia to adopt the CEPT Recommendation T/R 61-0-1 to allow visitors with a CEPT licence to operate in Australia using their home callsign portable without the need to take out a temporary VK licence
- Advanced licensees can have two-letter suffix callsigns when available

Operational

- ACA to free up the use by amateur stations of the public telecommunications network and Internet linking, and address in the regulations the potential for non-amateur access to an amateur station via the Internet or a telephone
- A beefing up of awareness of the ACA's method of dealing with interference issues, the responsibilities of those affected by it, and the resolution actions to be undertaken by radio amateurs
- Third party communications to an amateur station in another country will be permitted unless that country seeks a prohibition
- The ACA will continue to impose limits on the purity and stability of emitted frequencies, and maximum power limits
- Reduced station identification requirements for WICEN or similar networks providing emergency communications
- The Advanced licence will have a maximum transmit power of 400 W PEP (no change from the Unrestricted licence), although the ACA will more widely publicise the conditions under which it will issue higher power permits
- Encoded transmissions to be permitted for control signals from amateur satellite command stations, command and control signals for amateur stations, communications during emergency services operations and training

A copy of the ACA inquiry 'Outcomes' document was mailed to all radio amateurs. It can be found on the ACA website at <http://www.aca.gov.au/aca>

Comments about it can be mailed to Review of Amateur Service Regulation, ACA, PO Box 78 Belconnen ACT 2616, faxed to 02 6219 5353 or emailed to amateurs@aca.gov.au.

About the author:

Jim Linton VK3PC has spoken and written about licence restructure for more than 20 years. He co-authored two seminal discussion papers in 1984 and 2003 with Roger Harrison VK2ZRH – both of them being published in the WIA journal *Amateur Radio magazine*.

Women, radio

Christine Taylor VK5CTY

and Antarctica

Let us start in the reverse order:

Antarctica

Antarctica is a cold and desolate place. However it is a very important place to investigate, to help us understand world meteorology and geology.

The early explorers on their sailing ships saw glimpses of the ice. Captain Cook circumnavigated the continent in 1772-5. A Russian, Bellingshausen in 1819-21 sighted the Antarctic coast. The first party to winter over was the British Antarctic Expedition of 1898-1900. They pitted themselves against the harsh environment to explore and to study the geography, the geology, the flora and fauna and the weather. Later expeditions added to the list and the ionosphere became important as radio communications developed and the influence of the upper atmosphere on world climate was better understood. Initially getting to the South Pole and the South Magnetic pole were the goals, but once this was achieved, bases were established for long term study both on the continent itself and the offshore islands. Until 1958 Antarctica was for men only but from then on women have worked at Antarctic bases both for summer expeditions and wintering over.

Current investigations require a variety of skills in the team members, explorers, science investigators, observers, communicators and maintenance/construction.

Radio

Radio has been an important part of just about all Antarctic expeditions since Sir Douglas Mawson took a spark radio station to Macquarie Island in 1911. As time went by radios became more efficient, worked on more bands and were able to be taken on expeditions by sledge and vehicle. It became very important that most of the team members were able to operate the communication equipment. The specialists maintained it but every one needed to know how



VHF Antenna array at Davis, February 2003.

Photo by N. Storey. First published in "Aurora", the ANARE Club Journal Vol 22 No 4 page 8, in an article on VHF Radars at Davis.

Used by permission from ANARE

to operate it. Electronic and radio skills are required for many of an expedition's activities. One activity which requires both these skills is in ionospheric investigations. The picture, Photo 1, shows a VHF array used for these investigations, from "Aurora" Volume 22, No 4, June 2003.

The radio operator is almost as important as the doctor. Even today with IMARSAT, he/she has a role to fill. The radio operator can also be an amateur because it is from the field of those who have been interested enough in radio and electronics to do the exams that those with the requisite skills are found. Naturally, on the ice, each person has many tasks to perform, their professional jobs as well as taking their turn at all the normal duties like cooking and dishwashing, even the radio operator!

Radio contact in all its forms has been the link between the expeditioners and their families. Birthdays have been celebrated, and anniversaries remembered. Even romances have been nurtured and marriages arranged through those radio contacts.

Radio is important in many places as the only means of communication with the outside world. Until the advent of IMARSAT telephone communications in 1988, the radio in all its forms was the most important means of keeping the

ANARE (Australian National Antarctic Research Expeditions) members and their families in contact.

Many amateurs have done as my husband, Geoff, VK5TY did and acted as liaison for the amateur operators 'Down South' by having regular skeds and having family members come to their home so they could each hear the voices of their loved ones.

Women

Women have played a part in most expeditions since the early 1970s. Louise Holliday has the honour of being the first woman to winter on the Antarctic continent. Women have played many roles on expeditions, for example they have been doctors, scientists, technicians and expedition leaders. The short biographies which follow tell us something of women's activities with the Australian Antarctic Division. The material draws from "Aurora" the journal of the Australian National Antarctic Expedition Club, Volume 23 Number 1, 2003, and also Elizabeth Chipman's 'Australians in the Frozen South', Nelson, 1978

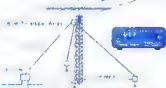
The photographs have all been released by the Australian Antarctic Division, Kingston, Tasmania and "Aurora".

continued next page

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Women, radio and Antarctica

continued

Ulla Knoxlittle, Denise Jones, Kerrie Hindle and Kim Harrington have worked for ANARE as professional licensed radio operators. If you know any of these YLs and could ask them to contact me I would be delighted to tell you their stories.

Many others have had a true, but fleeting, Antarctic experience by visiting on one of the cruise ships, as Bev VK6DE did at Christmas 2003. Others have taken a tourist flight over the region. For every one of those who have spent time on the Great Southern Continent, radio has been the lifeline.

Denise Allen



Denise Allen
AAD Photograph 44691.
Copyright C of A 1987

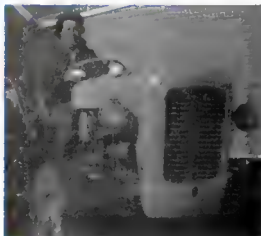
DENISE ALLEN first went south as a meteorology observer for the Bureau of Meteorology at Macquarie Island for the winter of 1985. She was the first woman employed by the Bureau of Meteorology to winter on the Antarctic Continent.

Denise was the first woman to become a Senior Observer with the Bureau of Meteorology (in 1988) and one of the two first women (with medical officer Lynn Williams) to be awarded the prestigious Antarctic Medal for outstanding service to the Antarctic. She also was the first woman to complete postings to all four of Australia's Antarctic bases, Macquarie Island, Casey, Davis and Mawson.

She gained her amateur licence and held the callsign VK0YL for the year of 1986. She says she didn't use the microphone very often once she realised just how popular she was with all the keen DXers. One call and she was smothered under an avalanche of calls. All those QSL cards!

Denise is not the only woman meteorological observer to go to Antarctica. Christine Spry is currently doing her 8th or 9th winter as a Meteorological Observer. How about that! And several other women have been employed as Meteorological Observers with the Bureau of Meteorology.

Elizabeth Chipman



ELIZABETH CHIPMAN worked for the AAD nearly all her working life and was one of four women who visited Casey in 1976. Her book "Australians in the Frozen South" Nelson 1978 was used in the preparation of this article.

(Left) Elizabeth Chipman at Macquarie Island
Photo by Jutta Hosel.
AAD Photo 1769C6
Copyright C of A 1979.

Shelagh Robinson



SHELAGH ROBINSON was one of the radio links. For fourteen years she was the Welfare Officer for ANARE. She would receive cables or telexes (usually in a special code) from men and women in the Antarctic and from family members at home. She would transcribe these and either send them on to addressee or telephone them with the messages. On a few occasions she actually knocked on doors and passed on messages personally

Shelagh undertook this task because

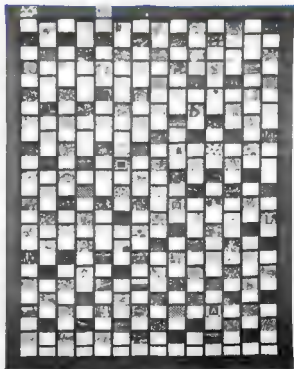
(Left) Shelagh Robinson
AAD Photograph 224D3 by Martin Betts
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she realised just how isolated you feel down there, from personal experience. Shelagh was one of the first three women (with Elizabeth Chipman and Jutta Hösel) to go to the Antarctic continent with ANARE. She was a Science specialist at Casey in the summer of 1975-76.

Like all those who have gone to the Antarctic with ANARE Shelagh still has strong bonds with that world. She acts as occasional correspondent to the ANARE in-house magazine, "Aurora", telling some of those stories that may not have got into the official reports.

Patchwork quilt in honour of women who held firsts in their field of endeavour

If you should go to Alice Springs, make a point of visiting the National Pioneers Women's Hall of Fame. There is a signature quilt in this museum recognising the work of women in many fields of endeavour including Antarctica. Two quilts were made. One is in Alice Springs the other was raffled to raise money for the museum. The quilts have been signed and the names embroidered with coloured panels that recognise the particular field of interest of each of the women. As you can see the quilt is very exciting and worth spending time over.



The Signature Quilt.

The quilt was installed in the NPWHF on March 7th 2003 to celebrate International Women's Day. There are over 300 names of which more than 30 apply to women who have spent time in Antarctica. The activities of the women cover a very wide range of activities. The book that was to be written telling all these women's stories has probably been published if you would like to know more about the quilt.

(Left) One of the squares

AR

First Board meeting of new national WIA

On 16 May 2004 the then Federal Council adopted a new Constitution for the WIA, and the Board appointed by that Constitution met for the first time on Saturday 29 May 2004.

The members of the new Board are:

Michael J. Owen	VK3KI	President
Ernest S. Hocking	VK1LK	Vice President
Glenn C. Dunstan	VK4DU	Director
Ewen R. McLeod	VK4ERM	Director
Trevor M. Quick	VK5ATQ	Director
Edward C. Thrift	VK2ARA	Director
Phillip J. Wait	VK2DKN	Director
Peter J. Naish	VK2BPN	Company Secretary
David A. Pilley	VK2AYD	Treasurer

The meeting lasted all day, with all directors and Peter Naish, VK2BPN, Company Secretary and David Pilley, VK2AYD, Treasurer, also present.

The Board undertook a number of formalities, including recording any potential conflicts of interests of directors, and a protocol to deal with conflicts. It reviewed and up-dated the cheque signatories for the Institute's bank accounts. It also adopted a Code of Corporate Ethics, to guide not only the directors and employees, but also the many volunteers who represent the Institute, one way or another. That Code is almost the same as the draft published in March AR, changed only to remove an incorrect reference to shareholders, and enhanced to include a reference to Institute conducted examinations.

The Code stresses the imperative of courtesy in all dealings with anyone representing the Institute.

The transition to a single, national body created many new tasks, and directors were given responsibility for particular areas.

The need for a national broadcast structure was identified, with QNEWS recognised as a potential core facility, and on the basis that news be disseminated as widely as possible, including where possible, through the clubs. Ewan McLeod was given this responsibility.

The Board noted that the Institute was represented on a number of committees

and the like, and it was agreed that the Institute's need for corporate knowledge required that all WIA representatives provide a report to the Board after every meeting.

It was agreed that the new board needed to know more about the Institute's publications, including AR. Ted Thrift was given this responsibility, and both he and President Michael Owen would attend the next Publications Committee meeting.

Ernie Hocking and David Pilley are to develop a plan for the immediate marketing of items such as books and badges, while Ernie Hocking and Phil Wait will develop a separate strategy for other marketing opportunities.

The Board noted that insurance, particularly liability insurance, was an important issue, particularly as the divisions had various policies, some covering clubs and members of clubs, and Peter Naish was given the responsibility of investigating the present position and possible cost savings with a single national cover, seeking assistance from others and preparing a report for the Board.

It was also noted that membership certificates were needed, and this was linked to the search for a new corporate image.

The Board agreed that the radio clubs were particularly important, and that it seemed that the relationship between the clubs and the Institute might differ from state to state. It was recognised that the Institute needed the support of the clubs, and it was not clear what the clubs needed from the Institute. President, Michael Owen, accepted responsibility

for this, saying he hoped to visit as many clubs as possible.

It was agreed that a FAQ section would be placed on the WIA website. Ewan McLeod is coordinating this, as well as the updating of the website.

All the appointments made at the Brisbane Convention were reconfirmed by the new Board, which also considered the ACA response to the review of the amateur service. The possible impact on the examination system, the possibility of the Institute tendering for work outsourced by the ACA was considered at length. Many tasks associated with this area were identified, and primary

responsibility for coordinating this effort was accepted by Phil Wait.

The importance of the role of the Technical Advisory Committees was identified and it was agreed that the directors responsible for coordinating with the Advisory Committees would also address the issue of a national Technical Advisory Committee.

The directors taking responsibility for particular areas are Ewan McLeod for

Queensland, Trevor Quick for South Australia and the Northern Territory and Tasmania and Glen Dunstan for New South Wales, with Michael Owen continuing to liaise with Western Australia and Victoria.

Ewan McLeod will liaise with all states regarding a national QSL bureau.

A number of other matters were reviewed and addressed.

It is likely that future meetings will include telephone meetings, with a further face to face meeting as needed, possibly in a few months time.

VK1 News

by Peter Kloppenburg VK1CPK

Forward Bias

National WIA: What the change will mean

The speaker at the May general meeting was Alan Hawes, VK1WX. Alan spoke to the subject of the Division's changeover to a local club. He said that as the WIA is about to change from a federal organisation to a national one, the state-based divisions would no longer exist and should become local clubs. Members of divisions will have a choice of joining the new national WIA and/or becoming members of the local club. The new fees for WIA membership will be \$75 for full members (F grade), \$70 for pensioners and students (G and S) grade, and \$50 for membership without 'Amateur Radio' (X grade). The new ACT based club will charge \$20 for annual membership. The 'Division' will no longer receive the Divisional Component of the WIA membership fee. This amounted to \$24 for each member. The WIA will keep the total amount of the fees, and thereby be able to employ salaried staff and provide more services to the members.

The ACT Division will therefore have to make a few drastic changes. These will include a change of name and a change in its constitution. Financially, this means that more reliance will be placed on fund-raising activities, and grants from the WIA. It is expected that the WIA will establish a QSL bureau at its headquarters, wherever that may be.

Naming the baby

The name change for the Division is something that all of us can contribute to, and various suggestions have already been made. The new name should indicate what our interests and activities are: communications, amateur radio, ham radio, radio operators, radio enthusiasts, radio and electronics, radio and hobbies, contesters, radio hams, ham operators, radio research & development, and transmitting and receiving.

It should also give an idea of where the organisation is located: ACT & District, Monaro District, Southern Tablelands,

Brindabellas, Southern NSW, South-East NSW, Canberra, and ACT. The new name could also indicate who the members are: i.e. licensed radio amateurs, hobbyists, CB operators, and experimenters. Lastly, the name could indicate the type of organisation, such as Club, Union, Association, or Society.

Following are a few suggested names:

- *Canberra and Region Amateur Radio Club (CARARC).*
- *The Monaro and Southern Districts Radio Club (MSDARC).*
- *Canberra and Region Electronics and Radio Club (CRERC).*
- *Canberra Amateur Radio Society (CARS).*
- *Amateur Radio Society of the ACT (ARSA), and*
- *Association of Amateur Radio Operators (AARSA).*

If you have any suggestion for the Division's new name, send them to the Secretary, Deane Walkington: deanew@pcug.org.au.

Hams may be needed for Disaster Relief

Our WICEN coordinator for the ACT, Phil Longworth, VK1ZPL, is looking for volunteers to help out with providing communications on VHF/UHF (with hand-helds) at various sporting venues. This is a rewarding activity, as you get to know other ACT radio amateurs, as well as becoming familiar with the radio hardware that is used to conduct and supervise the activity. You also become more familiar with the layout of the ACT, and services provided by the State Emergency Services (SES). It is also more than likely that volunteers with radio communications experience will be required for a future Disaster Relief organisation to be organised by the Government. This may occur in response to ITU S25.9A "Administrations are encouraged to take the necessary steps to allow amateur stations to prepare for and meet communication needs in support of disaster relief".

Looking at "Outcomes"

The publication of "Outcomes of the Review of Amateur Service Regulation" by the ACA early in June was eagerly greeted by the Amateur Radio Community. All the concerns expressed during the review period were addressed and dealt with. Most importantly, the entry level, aka Foundation Licence, into the amateur radio service is now becoming a reality and will be modelled on the one in use in the UK.

However, there is one detail of the licence specification that needs to be looked at again. That is the maximum output power level of 10 watt Peak Envelope Power (PEP). Of the low-power transceivers readily available in Australia i.e. Yaesu FT-417, Icom IC-703, Ten-Tec Argonaut V model 516, SGC-2020, and the Alinco DX-801, none of them quote output power levels in PEP. They all quote an 'average' power level of between 5 and 20 watt.

To measure a power level in PEP you would need a two-tone audio oscillator, an accurate RF power meter and an oscilloscope. Hardly the type of test equipment readily available to Foundation Licence holders. Radio Amateurs are invited to express any of their concerns re Outcomes on the ACA Website amateur@aca.gov.au.

Next meeting

The next General meeting will be held on Monday evening, July 26, 2004 at Scout Hall, Longerenong St. Farrer at 8.00 pm. Cheers.

**WICEN
(ACT)
volunteer today**

email:

wicen@vk1.wia.ampr.org

website:

<http://www.vk1.wia.ampr.org/WICEN/>

VK2 News

Tim Miles VK2ZTM.

Hello there. In this time of change - much has been reported in this magazine and elsewhere. These notes have to be compiled and submitted more than a month before you get to read them. More up to date reporting is achieved by the spoken word in news bulletins and the written word via the web pages. In the meantime, some items with a longer lead time.

The next exam being conducted at Parramatta will be early August with the closing date for applications later this month. Inquire via the Internet or the office.

A couple of decades ago there was an extensive WIA video library maintained in VK5. It has since moved a couple of times and unfortunately has not been updated. There were several lectures given to the VK5 Division in the 1980's and recorded on video. While the technology described in the lectures may be old, the theory and background is still relevant today. VHS copies of some of the material are available for loan from the Parramatta office. Check with them if you have an interest in borrowing same. They are available Australia wide for a two week period. You will have to cover the postage both ways. By now, a list of the titles may be on the Internet - follow the links to the VK2 section.

The next scheduled Trash and Treasure at Parramatta will be on the last Sunday

of this month - the 25th. It will be followed by the regular Home Brew gathering. Following a lecture given at the May meeting by Gordon VK2ZAB on construction techniques used in making (mainly VHF & UHF) antennas, it was decided to devote the next meeting to the practical side of the talk. Most interest was for 70 cm antennas, so it was decided to make a Yagi at the July Meeting. If you would like to take part in the construction afternoon, get in touch with Peter VK2EMU in sufficient time to add your name to the material purchase list.

At Dural, the morse transmissions came to a halt when the rather old computer refused to start. Just as old is the program used to run the morse. It requires a slow computer to handle and maintain the speed. By now it should be back on air. What we would like to source are some more modern programs that could be run on later model computers. If anyone could point us in the right direction please email Dural via the Parramatta office or contact Mark VK2XOF. The long term plan is to utilize non-mechanical memory so that it does not have to rely on floppies or hard drives as the source.

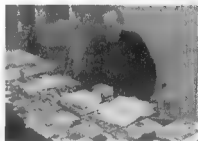
Another aspect of Dural is the tree growth. Many have now exceeded the height of the HF antennas and

recently permission was given by local authorities to trim some of the growth. This, along with dead wood created by the various high winds in recent times will need to be removed. If there are any readers around the Sydney region who have wood fires and need to source wood, you might care to register your interest with the Parramatta office.

June is a time for field days and gatherings around the country, judging by the details in recent "AR's". In this State, the Oxley Region ARC conducted their annual event over the long weekend. Next month, NSW WICEN will be conducting their AGM. Like many groups they seek new members for fill positions on their management committee.

Until another time,

73, Tim VK2ZTM.



VK2 President Chris Flek VK2QV in his role as the bookshop manager, selling books at the Port Macquarie Field Day.

VK6 News

Compiled by Will McGhie VK6UU

Input to: will2@inet.net.au 08 9291 7185

Towards a National WIA

Having just returned from a sailing holiday in Shark Bay, 850 km north of Perth, I'm a little out of touch with the detail towards the change to a National WIA. However, as the changes are taking place so quickly and due to the lead-time from writing this to appearing in Amateur Radio magazine, there is little point in trying to write about the changes other than in general terms.

As you should be aware, it is happening. The VK6 division has agreed in principle for a National WIA and is deep in discussion about the future of

the VK6 division. At the time of writing, several options are being considered as to the future of the VK6 WIA division.

There has been ongoing debate within the VK6 Council. Not all Councillors have been in agreement over several issues. The robust discussion has been essential, as what may have seemed a simple process, has many small but important issues. This has been the busiest time for Council with many meetings taking place over the last few months.

In order to keep in touch with this rapid transition listen to the VK6 news

and the various WIA web sites and in particular the VK6 WIA Web page <http://members.inet.net.au/~vk6wia/>.

Support the change

Just how different the new national WIA will be from the old Federal WIA is yet to be seen. Many have spoken about its benefits and few about what may be a new name with the same problems. However there are many talented Amateurs who have skills that are desperately required. The list of the new board members contains many of the people we need. They

have a range of skills that is the best chance we have of revitalizing amateur radio in Australia. The old WIA had a proportional declining membership over a long time. Many saw the WIA as an argumentative slow moving organization and would not belong. The old structure has responded and now is your chance to give the new national organization a go. If you were not a member, for whatever reasons, of the old Federal WIA, now is the time to support the new structure. If you firmly believed in not supporting the old WIA then most if not all of your reasons should now be gone. Join, support the new National WIA. At least give it a go and make a judgment down the track. Lack of support will continue the decline. Your support will give all Amateurs in Australia a strong single voice. Without it, we all will be on the receiving end of other forces hungry for spectrum and reduced privileges for Radio Amateurs in Australia.

WICEN WA

As a radio amateur, are you able to provide communication facilities in time of need?

WICEN WA is seeking names and call signs of licensed amateurs, metro or regional based, who are able to perform as part of a communications network that could be used in an emergency situation.

You will need to have portable, mobile or base station equipment operational from power sources other than the normal domestic power supply and be able to operate for an indefinite period of time. Your equipment can be HF, VHF or UHF, or a combination of these.

Rob VK6PO,

email vk6po@eon.net.au,

tel 08 9341 3939

7 Anne Place Scarborough WA 6019

Please indicate your interest by contacting Jim, VK6JP or Rob, VK6PO and we will send you a form to complete which will outline your capabilities.

You will not be requested to join WICEN, nor will there be any other activities other than your normal operating practices. This is simply a quick contact list of operators who can fulfill a need should the occasion arise.

Jim VK6JP

email jilmaree@webcane.com.au,

tel 08 9364 1779

14 Henley Rd, Mt Pleasant WA 6165

VK3 News

By Jim Linton VK3PC

WIA Victoria web site: www.wiavic.org.au

email: wiavic@wiavic.org.au

WIA Victoria AGM

About 60 members attended the WIA Victoria Annual General Meeting held on Wednesday 26 of May with many eager to learn more of the developments occurring in relation to the new WIA.

The reports from the President, Treasurer and Secretary were adopted (these had been issued to members and can also be found in the Member's Section of the WIA Victoria website). Appointments were made of both the auditor and returning officer.

With the formal and statutory requirements completed, a series of presentations was made including recognition of those WIA Victoria members who have made significant contributions.

Three new Honorary Life Members were created – they are Bill Trigg VK3JT, Gary Furr VK3KKJ and Ron Cook VK3AFW. Congratulations on receiving this high recognition for your meritorious contributions and service.

President's Commendations which included a 2004 mint coin set were presented to:

- Rob Carmichael VK3DTR for his service which included being a councillor, class instructor, providing publications relations opportunities for amateur radio, and long-time broadcast announcer and contributor.
- Peter Forbes VK3QI for the excellent work he did that created a compelling argument for the WIA to present to the ACA and obtain an expansion of the 80m DX window.

The fifteenth inductee into the WIA Victoria Elmer Hall of Fame is Keith Proctor VK3FT, nominated by Paul Ashby VK3MR. The Elmer Hall of Fame is hosted on the WIA Victoria website and has been updated to include the citation for Keith VK3FT.

The President Jim Linton VK3PC

continued next page



With the 2004 Australian Mint coin set received as part of the WIA Victoria President's Commendation, is Peter Forbes VK3QI who was recognised for his key role in the WIA gaining expansion of the 80m DX window.

Antenna

'HomeBrew'

(with a lot of help from your Bushcomm kit)

SWCS-KIT HF ANTENNA



This is a kit version of our popular SWC-100S single wire model but you have the great satisfaction of constructing your antenna.

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Common tools required.

You save money and have fun

Once completed correctly your antenna will be a replica of the SWC-100S model. This is a single-wire, base-situation antenna, constructed with stainless elements to give high resistance to corrosion. It has a length of 34m in total. Trees, buildings or other structures can be used to suspend the antenna (avoid running the antenna over iron-roofed buildings as this reduces the effective height above ground). The antenna can be mounted either horizontally between two supports, or as an inverted 'vee'.

Frequency Range: 2-30 MHz
Impedance: 50 OHM
Power Input: 100 Watts, 250 Watts PEP

This kit contains:

Balun (x1) Load (x2) S/S Thimbles (x2)
Copper ferrules (plus a few practice extras!)

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State News

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surprised the President of the Moorabbin and District Radio Club Ken Morgan VK3CEK with a physically large cheque as a contribution towards the restoration and upgrading of the club's historic honour board.

The WIA Federal ARDF Coordinator, Jack Bramham VK3WWW presented both Jim VK3PC and WIA Victoria with certificates of participation in the IARU Region 3 ARDF Championships held in Ballarat. Jack VK3WWW acknowledged the support received that made the running of that international event possible.

After closing the formal AGM a discussion session was held about the restructure of the WIA.

President Jim Linton VK3PC addressed the gathering to provide information on how the WIA Federal structure had not worked for some time, and reaffirmed that the Victorian body is in support of a national membership WIA.

Alternative Federal Councillor, Peter Mill VK3APO answered a series of questions from the floor and valuable assistance was given by David Wardlaw VK3ADW who has very good knowledge about the topic.

In the end a much greater understanding of the restructure was gained by those in attendance, and the session has been widely described as

being very positive and beneficial to members.

The WIA Victoria Council is working through the necessary legal and administrative steps to reach a stage when a recommendation will be put to members for a vote.

There are still some reservations among the membership about this enormous change. We can all look forward to further developments in the time ahead.

For those unable to attend the AGM, it was captured on video. To inquire about obtaining a copy please email Bruce Bathols VK3UV wiavic@wiavic.org.au and state whether you want it in VHS or DVD format.



Rob Carmichael VK3DTR expressing his appreciation on both receiving the WIA Victoria President's Commendation and being able to have provided support for the Institute.

Bill Trigg VK3JTW LMWIA(Vic)

Bill served on the WIA Victoria Council under three Presidents. Held the positions of Vice President and Alternate Federal Councillor for parts of his term.

When the WIA Victoria Office relocated from Brunswick Street Fitzroy to Taylor Street Ashburton in the mid 1980s he was heavily involved in making it happen.

His friendly disposition made him an asset at the WIA Federal Conventions that more than occasionally in those days involved lobbying between the delegates on motions and decisions.

While living at Surrey Hills he joined the broadcast team in about 1989 and

later volunteered to fill the position of Broadcast Officer, producing and announcing the weekly VK3BWI broadcast.

Starting from a base of very little word processing skills, Bill mastered a computer that did at times crash losing parts of the broadcast text that had to be retyped.

In mid 1998 Bill moved initially to the Geelong suburb of Hamlyn Heights before setting up home at St Leonards on the Bellarine Peninsula.

His fellow councillors thought that would be the end of Bill's involvement with the broadcast, but not so.

Without a grumble he produced the

State News

broadcast and put it to air. That involved two hours of travel and somewhere close to 150kms each way.

He teamed up with the late George Hunt VK3ZNE who took over as Broadcast Officer for a number of years.

Bill resumed broadcast duties in April 1999 and continued until his resignation from both the broadcast and Council about September 2000, ahead of his relocation to Balmoral.

He is not known to have missed an Annual General Meeting and has in many ways continued to provide support WIA Victoria.



Bill Trigg VK3JTW and Gary Furr VK3KKJ at the AGM with their WIA (Vic) Life Membership Certificates.

Gary Furr VK3KKJ LMWIA(Vic)

Gary is a former WIA Victoria Councillor who did not seek re-election after two years so he could concentrate on the position of Internet Project Development Officer. In that role he has made enormous contributions.

Through this behind-the-scenes role, Gary has contributed greatly since 1998 to the well-being of WIA Victoria as a result of its website and online enhancements. Gary comes from a technical background and has used a lot of natural creative flair that can be seen on the website.

He has developed it from a basic site to one of the best websites of its type. It is actually two websites when you take into account the Members Sections. Nothing is any bother to Gary. He has been able to meet any demands with enthusiasm.

He has made himself readily available to post urgent material, and reports filed from major events at Darwin, Melbourne, Adelaide, Brisbane and Taiwan.

Ron Cook VK3AFW LMWIA(Vic)

Ron is one of our quiet achievers. His activities can be traced back to the defunct WIA Victoria VK3 VHF Group. He has been a regular columnist for the WIA journal monthly, *Amateur Radio*.

Ron is one of a relatively small number of radio amateurs who have a professional engineering background, which when combined with an amateur interest makes them valuable members

of the community, helping to broaden the understanding of most aspects of amateur radio.

His technical knowledge and ability to explain difficult topics in simple terms has educated many thousands of radio amateurs throughout Australia over the past decades. His lectures at

the education section with its interactive trial examinations has been linked to many club websites around Australia, and is the leading resource of the material it provides.

The WIA Victoria Council recognises that the work and dedication of Gary Furr VK3KKJ has contributed greatly to the retention of members, attracted new ones, and improved the image of WIA Victoria.

The flow of membership application forms received that were downloaded from the website is one evidence of its success.

Through Gary's efforts WIA Victoria is able to communicate via email with at least half of the membership and it has enabled otherwise impossible consultation with members.

His technical knowledge and ability to explain difficult topics in simple terms has educated many thousands of radio amateurs throughout Australia over the past decades. His lectures at

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the GlippsTech technical conference and radio clubs are always well received.

Ron is a mild-mannered likeable person. He has always been willing to help others in their amateur radio activities, and provided counsel and valued advice to the WIA Victoria Branch Council.

When the WIA Victoria 2-metre propagation beacon VK3RTG in Melbourne failed, Ron offered to fix it. He has maintained the beacon for many years as part of his continuing involvement and support for activity on the higher bands.

He answered the WIA Victoria call for volunteers to set up a display at cinemas showing the movie "Frequency" - with Ron representing our hobby at a Brighton movie house.

Most recently Ron was the initiator of the WIA Victoria V13BVS special event station for the 150th anniversary of the first European settlement in Victoria.

Ron Cook VK3AFW takes a moment out of busy retirement to receive his WIA (Vic) Life Membership Certificate.



VK7 News

Divisional News

The change to a National body will see a number of changes in the VK7 Division and the Implementation Agreement is the instrument that will assist this transition and in VK7 it will include:

- Appointment of a VK7 regional WICEN Coordinator
- Lease of the OTC Radio Station/clubrooms
- Transfer of WIA repeaters and beacons and
- Administration of the Tassie Devil award.

Once this agreement has been settled then a Special General Meeting of the VK7 Division will be held to agree and vote on the agreement.

The change to the National Body will require the VK7 Division to decide on a future structure and decide whether to stick with the current Division/branch structure or move to three separate clubs with affiliation with the new national body. There is much work ahead for this Division!

Branch Meetings

North West News

Tony, VK7ZX has let me know that both Q5 and Spectrum broadcasts will be recommencing following the short break

due to health problems. Spectrum will be heard on a Monday night at 7.30 PM on 2 metre repeaters around Tasmania and Q5 features on a Thursday night at 8.00 PM on Northern repeaters. Great to hear the medical problems have been sorted out and we look forward to the Q5 and Spectrum broadcasts again.

Northern News

Two successful meetings have been held in the Northern Branch and Al, VK7AN reports there was outstanding attendance of members and non-members at both meetings.

The May 12 meeting saw guest speaker Bill, VK7AK with an interesting biography of Grote Reber. Al reports "Many members were left in awe at his un-proclaimed achievements, Bill was at his utmost glory regarding these explicit details. Congratulations on a fine, well prepared lecture"

The June 9 meeting heard an excellent speaker Rex, VK7MO describe his digital modes experimentation and his recent DXpedition across the Nullarbor Plain to Perth. The night continued on a

Justin Giles-Clark VK7TW
Email: vk7tw@wia.org.au
Divisional Web Site: www.wia.org.au/vk7

practical note with a group discussion on the construction of his antennas for 144 & 432 MHz. "Many new members were delighted with such a creative meeting, culminating in our speaker receiving a standing ovation from the floor." Al said.

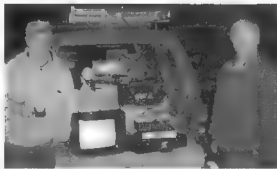
Southern News

BPL/PLC Trial in Hobart

Aurora Energy has let me know that the BPL trial equipment was removed at the end of May and that the ACA continues to monitor the situation. We eagerly await the outcome of the trial and I will keep you posted on any developments.

Southern Meetings

May 20, saw a group of interested members and visitors watch and discuss



Ken, VK7DY and Gary, VK7JGD demonstrating digital TV

the video presentation by the President of the RSGB, Bob Whelan G3PJT, when he spoke to the NSW Division in March 2003 about the introduction of the Foundation Licence within the UK.

May 27, Branch members and visitors were treated to a demonstration of digital and satellite TV & Radio. Gary, VK7JGD demonstrated digital TV and Ken, VK7DY and Martin, VK7ZBG demonstrated digital TV via satellite.

Ken and Martin set up and aligned two dishes - an offset feed satellite dish of about 80cm on Optus C1 at 156.0°E and a bigger dish of about 1.2m to the Optus B3 satellite at 152.0°E. Martin gave an interesting demo of just how critical alignment is using both the satellite alignment box and the set-top box and at 12GHz it doesn't take much to loose that signal and Peter, VK7TPE can attest!

Thanks to Gary, Ken and Martin for giving us the demonstration, I think we all learnt something, thanks guys.

June 2 was an address by Phil, VK7ZAX our Divisional President on the new National Constitution and the implementation agreement. Phil ran through many aspects of the new national body and some important aspects of the implementation agreement for VK7.

June 9, members and visitors watched a video presentation on the Mobile Phone Network given by Grant Willis, VK5ZWI to the Adelaide Hills Amateur Radio Society (AHARS). This was a great in-depth technical look at the mobile phone network in Australia. Thanks to AHARS for lending us the presentation.



ar

Peter, VK7TPE using the satellite alignment meter with the big dish

Silent Key

Wilfred David Butler Smith VK2DAL

Better known as "Dave"

We were saddened by the passing of David, VK2DAL on May 16th at the age of 73. Although David had been fighting with Muscular Dystrophy over the past years he maintained his daily skeds with his friends overseas.

David, as a young school boy, found electronics interesting, and built his first crystal set. After getting 'the bug', he built battery powered one and two valve receivers using his pocket money. From there he moved on to building his first transmitter using a Geloso VFO and a 6148 valve.

He was apprenticed as a fitter and turner. In 1958 he joined the NSW Police Force on general police work, but with his love of radio he was quickly transferred to the Communications Branch where he obtained his Commercial Wireless Operator's Certificate of proficiency at the Marconi School of Wireless. His technical skills soon put him in charge of technical maintenance, and in 1988 he was promoted to the rank of Superintendent in charge of NSW Police



Communications and Operations.

He took early retirement and ran a computer systems consultancy, managing the installation and commissioning a computer based Pathology System for all the hospitals in the central Sydney

area Health Service. On completion of this project he retired and moved to Wauchope.

David was first licensed in the 50s as VK2IS, but never did like the call sign and eventually changed to VK2DAL. His station at Wauchope was one to be admired, especially his antenna system. (Which was written up in "Amateur Radio"). Through the local Electrical Supply Company, he acquired a 18m pole, built rail tracks on it, and motorized it so that the antenna could be raised or lowered as required.

He was an active member of the Oxley Region Amateur Radio Club and had served as their President in 1995.

David is survived by his wife Roma. Now an "SK", his key is silent, but the memory of VK2DAL will linger on. He will be sadly missed. His funeral service on 20th May 2004 at Port Macquarie was attended by a large number of amateur radio operators.

Submitted by David A. Pilley VK2AYD

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

A simple but effective lecture. The talk in May was a very useful one. Rob VK5RG told the members how they could recover useful components from 'junk'. Rob has obtained many trimpots, LEDs, toroids and crystals from the things discarded at garage sales. Occasionally the memory chips are worth retrieving but it is more often the small components that are most worth while.

The most useful device in your workshop when you are hoping to get some bits and pieces is a heat gun. As long as the components have not had their wires folded, the application of a nice hot heat gun, followed by a thump on the bench will produce a veritable 'rain storm' of things.

After that all you need is a collection of the sort of boxes to be found in these 'cheapie' shops to put your treasures

into and you can turn to the next circuit board. Remember, not only resistors are colour coded or have their values written on them, capacitors are usually labeled these days, too. All of them will be useful if they are sorted into sizes as they come off the boards.

To get everyone started Rob had a couple of boxes for Lucky Dips.

Most members went home with some treasures.

Any visitors in Adelaide on the third Thursday of a month (except July and December) are welcome to come to an AHARS meeting. Contact Geoff VK5TY or Paul VK5PH for more details. Both are QTHR in the callbook.



Some useful junk

Fleurieu Group Luncheon

Christine Taylor VK5CTY

One of the largest groups gathered in May for the regular get-together of the Fleurieu Group of radio amateurs and their partners. As usual the luncheon was held in the Goolwa Hotel and as usual the weather was lovely.

Everyone was delighted to see the President, Frank VK5FJ and his wife Marilyn arrive as Frank has been quite ill recently. Let us wish him a speedy recovery.

Another unexpected attendee was Tony VK5ZAI and his XYL Judy. Many people in the amateur world know of Tony and his exploits into space communications. Tony was the anchor communications with Andy Thomas during his months on MIR and his shuttle flights. Since that time Tony initiated regular skeds between school children and the various shuttles as they passed overhead.

Hopefully when the shuttles again are flying, these and other children will be able to 'talk' to space men through the programs Tony has started.

Tony and Jill are now living down in the South East of VK5, having moved back to where they started from before they moved to the Riverland. If you go to the SERG Convention over the June long weekend you are almost sure to see Tony there.



Tony ZAI and his wife Judy

Eastern and Mountain Districts Radio Club (EMDRC)**Celebrating the ITU's 139th birthday**

A tradition in amateur radio is to celebrate World Telecommunications Day, May 17 each year to mark the formation of the International Telecommunications Union (ITU) in Paris in 1865.

Callsigns with the ITU prefix appear on the amateur bands during the 24 hours of the day, and a regular participant in this exercise is WIA Victoria's AX3ITU.

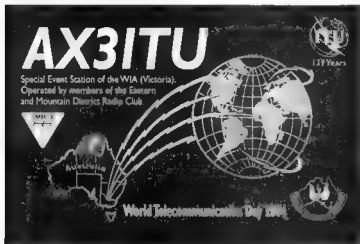
The Eastern and Mountain Districts Radio Club (EMDRC) operated the special event station on behalf of WIA Victoria as it has enthusiastically for a number of years.

The EMDRC had a good mixture of SSB and CW operators on HF participating on most bands, with some electing to operate in multiple sessions to fill the gaps.

The ten operators in roster order are: Peter VK3DI, Tony VK3TZ, Carl VK3EMF, Don VK3MNZ, Gwen VK3DYL,

Dave VK3KAB, Peter VK3KG, Gavin VK3VTX, Mark VK3ZMF and "tail end Charlie" was Dick VK3LN.

A special QSL card for 2004 has been printed and is available. QSL is via VK3ER, or the bureau.



Tony VK3TZ

Geelong Amateur Radio Club (GARC)

A big thank you to all those amateurs who helped make the first GARC band invasion such a success. On the morning of May 23rd forty metres sprang to life with GARC members at 1030 hrs. Contacts were continuous with many interstate amateurs participating. Well done all! Again by the time you read these notes the GARC will have invaded forty metres on July 2nd. I hope many of you were able to join the fun. While on this topic, maybe some other clubs could invade a band at some suitable time and so increase activity. If we as amateurs want to keep our bands we must populate them with talkers NOT listeners.

The monthly meetings were again well attended and it is interesting to note that none of the presentations had to do with radio related topics. The month started with a most interesting and well researched presentation by Don Bainbridge on the Australian involvement in atomic bomb testing in the Australian interior. The following week Bob VK3HFL told us how to make a small fortune- take a large fortune and refurbish a 40ft boat. Members are now anxiously awaiting the launch. The last week of the month David Paterson gave a fascinating presentation displaying and demonstrating aids for the visually impaired. The presentation was the more

interesting because David is seriously impaired. The ease with which David was able to carry out various tasks was astounding. David attends the Gordon TAFE and is studying electronics—he also attends the GARC class each Friday night and it is safe to say that within the next couple of months you will hear him under his own callsign calling CQ CQ CQ VK3 — calling CQ.

That's the lot for this month. Don't forget to listen for the next GARC band invasion—when? --- who knows-- but a hint would be to listen to the callbacks to the Sunday morning broadcasts

73 Dave VK3AZX

Club News

Gippsland Gate Radio & Electronics Club

The GGREC members are at it again. On July 17 they shall be conducting their Annual Hamfest Sale at the Cranbourne Community Hall on the Corner of Clarendon and High streets in central Cranbourne. (High Street is part of the Sth. Gippsland Highway, Melway 133 K4).

Some 40 tables of goods will be presented at this large venue, but stallholders should book early as demand is expected to be very high following the great success of last year's event. Reservations for stallholders may be made by contacting Dianne Jackson VK3JDI on (03) 5625 2545. Doors open from 8:30 am. for stallholders and 10:00 am for buyers. Profits from the \$20 per table seller fee and the \$5 buyer

admittance fee will go towards the construction of a "Club Shack" building at our Club meeting site in Cranbourne. Take-away food with free tea and coffee will be available. The entry fee includes a ticket in the Door Prize competition that will be drawn at around 1:00pm for all who register upon entry. First prize is a 12 channel hand-held GPS unit.

Visitors are also welcome to attend our Club meetings that are conducted on the first and third Fridays of each month at the Girl Guide hall in Grant Street Cranbourne. Check out our comprehensive web site at: www.ggrec.org.au for more information on the Club and its events.

Albert Hubbard
0418 339 779

Maryborough 150th Anniversary

The sesquicentenary of the naming of the central Victoria town of Maryborough is being celebrated by a range of activities including special event amateur radio station VI3JA.

The Central Goldfield Amateur Radio Club (CGARC) Secretary Allan Greening VK3PA said VI3JA will be activated from 8 July to 8 September.

Look for it mainly on the 80 m DX window 3.789 MHz, 20 m SSB, RTTY and CW, 144.125 MHz SSB or CW. QSL

to VK3JA or via the bureau.

The Maryborough 150 Celebrations Committee is welcoming visitors, residents and past residents to celebrate 150 Golden Years in Maryborough.

The birthday will include reunions, exhibitions, entertainment, historic vehicle display, tours of historic buildings, a photograph record of today's residents and business people, and the release of a history book.

Silent Key

Abe Deitch

It is with regret that I announce the passing of Abe Deitch age 82 years old on 5-03-2004 at Lane Cove Sydney.

Abe was the youngest of 5 brothers Solomon, Louis, Barney and Myer and 2 sisters Rebecca and sole surviving sister Gertrude

Abe was the last remaining brother associated with Deitch Brothers army disposals store at 74 Oxford St Darlinghurst known as the store in the middle of Oxford St, well known amongst hams for ex military radio equipment from the fifties till the late nineties, the store being run by Sol and Abe Deitch. Abe was the quieter and younger of the brothers working in the

store while Sol would attend the various Military Auctions held around Australia after the second World War. The store was well known for the mountains of disposal equipment with only enough room for one person at a time to navigate the narrow maze inside the shop at Oxford St. and warehouse at Mascot.

It was often joked that upon the closing and subsequent removal of items at both stores a skeleton would be found of a customer buried or lost under the mountain of equipment

He will be sadly missed by his three daughters, son and close family members

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"Hey, Old Timer..."

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Sunderingham VIC 3191

or call Arthur VK3VQ on 03 9598 4262 or
Bill VK3BR on 03 9584 9512,

or email to raotc@raotc.org.au
for an application form.

Contest Calendar July - September 2004

3 July	Jack Files Contest	(CW/SSB)
11/12 July	IARU HF World Championship	(CW/SSB)
17 July	VK/trans-Tasman 160 Metres Contest	(CW/SSB)
17 July	Colombian Independence Day Contest	(CW/SSB/RTTY)
24/25 July	Russian RTTY Contest	
24/25 July	RSGB IOTA Contest	
6 Aug	QRP Day	(CW/SSB/FM)
8/9 Aug	Worked All Europe DX Contest	(CW)
14/15 Aug	RD Contest	(CW/SSB/FM)
21/22 Aug	TOEC WW Grid Contest	(CW)
28/29 Aug	SCC RTTY Championship	(RTTY)
28/29 Aug	YO DX HF Contest	(CW/SSB)
28/29 Aug	ALARA Contest	(CW/SSB)
4/5 Sep	All Asian DX	(SSB)
11/12 Sep	Worked All Europe DX Contest	(SSB)
25/26 Sep	CQ/RJ WW RTTY DX Contest	(RTTY)

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FT- 8900R Quadband ..\$899	VX- 2R Tiny Dualband..\$399
FT- 8800R Dualband..\$699	VX- 5R Triband H/H ..\$549
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E & OE

Contests

Greetings to all readers

That raises the question...

Below are the results of the Wadda Cup for 2003. You may recall that this was held on 21 June, 2003, and it was the second year that the event had been held. It is an SSB-only event and one that should be able to take its place in the annual VK Contest Calendar – certainly the type of contest that could do much to encourage newer operators on the HF bands.

Normally I would not seek to be critical of Contest Managers and the time that they take to release results; but in this case I feel that comment must be made about what has taken the sponsors so long to publish the results and the *modus operandum* of the rules.

The sponsor of this event is the Central Highlands Amateur Radio Club of Tasmania (CHARCT), but an unusual feature of the rules is that the winner in any year becomes the Contest Manager for the following year. This, I feel, is a mistake and may be at the root of why it has taken so long for the 2003 results to appear.

Contest Management is not something that can be done by just anybody without knowledge, serious thought and planning. One would hope that this approach is brought to everything that we do in Life, but we all know that it is not so.

I would like to suggest that the objects of the Manager of any contest are (1) to collect all logs, (2) to check as carefully and as accurately as possible one log against another, (3) to compile an accurate list of names and scores of those who submitted entries, (4) to prepare and send any certificates and/or trophies, (5) to publish the results within a reasonable time after the event. In fairness to this latter point, some leeway should be allowed for late entries, but we all know of the advertised closing date for a contest and a question could be raised as to why should there be any leeway, especially in these days of electronic log submission??

At time of starting these notes (mid-May), there has been no indication

as to whether the Wadda Cup will be held this year or not. Perhaps many of you don't care one way or the other, but I suggest that the image that this approach projects is a "she'll be right, mate" approach and not a good image for either the sponsor concerned or for the contesting community in Australia. Certainly we may wish to do things our way, but that raises the question just how far do we go trying to be uniquely Australian?

If you would like to run a contest, fine; but please be organized and consistent in your approach to its management.

Another question

Something else on which I would value YOUR opinion, please.

From time to time I have been told that I should not take part in any contest for which I am the Manager. Presumably these critics would wish to apply that to any manager. Some critics are quite adamant that "administrators should not be users".

Against this I could argue that ours is a hobby, not a professional presentation, therefore we are all entitled to enjoy our hobby in the ways that give us interest and pleasure.

On this issue I would be most interested to hear discussion, either directly to me or via the 'Over to You' columns in this magazine.

RD and ALARA times...

The two main contests for August are coming round again, so please, as I ask each year, check your stations to see that they are in good shape for these occasions.

... plus QRP Day

The annual QRP Day contest has been presented by the CW Operators' QRP Club for several years now. It has never been a hugely popular event, but this year the Club has decided that it is time to let everyone know that the emphasis is not solely on Morse code – it is a QRP Club! This year the contest will embrace both CW and voice (SSB and FM), so there should be something for everyone. Please read the rules below and join in. Note that the event is scheduled for a FRIDAY night!!

73, good contesting and hear you on air.

Ian Godsell VK3JS

Acting Federal Contests Co-ordinator

Results Wadda Cup 2003

VK5SR	29 pts
VK3MGZ	22
VK2BPL	22
VK3EK	20
VK2LCD	20
VK7JGD	20
VK7KZ	20

VK4KSS	19
VK7VH	19
VK3MSW	18
VK3GER	16
VK3JSS	16
VK3FH	16
VK3KMB	16

VK5GX	14
VK4MIA	12
VK3MMM	12
VK2JHN	7
VK3JKY7	6

SWL Ben Henderson
26 points

Amateur Radio for **100% amateur radio**

2004 Remembrance Day Contest

14/15 August 0800z Sat - 0759z Sun

Presented by Alek Petkovic VK6APK

This contest commemorates the amateurs who died during WWII and is designed to encourage friendly participation and help improve the operating skills of participants. It is held close to 15 August, the date when hostilities ceased in the south-west Pacific area.

It is preceded by a short opening address by a notable personality transmitted on various WIA frequencies during the 15 minutes prior to the contest. During this ceremony, a roll

call of amateurs who paid the supreme sacrifice is read.

A perpetual trophy is awarded annually to the WIA Division with the best performance. The name of the

winning Division is inscribed on the trophy, and that Division then holds the trophy for 12 months. The Division also is given a certificate, as are leading entrants.

Rules

Objective:

Amateurs in each VK call area will endeavor to contact amateurs in other VK call areas, ZL and P2 on

Bands:

1.8 - 30 MHz (no WARC). On 50 MHz and above amateurs may also contact other amateurs in their own call area.

Contest Period: 0800z Saturday, 14 August to 0759z Sunday, 15 August, 2004. As a mark of respect, stations are asked to observe 15 minutes' silence prior to the start of the contest, during which the opening ceremony will be broadcast.

Rules:

1. Categories:

- (a) High Frequency for operation on bands below 50 MHz;
- (b) Very High Frequency for operation on and above 50 MHz;
- (c) Single Operator;
- (d) Multi-operator;

2. Within each Category the Sections are:

- (a) Transmitting Phone (AM, FM, SSB, TV);
- (b) Transmitting CW (CW); Note: Digital modes such as Packet, RTTY, AMTOR, PSK31 etc are excluded from the contest.
- (c) Transmitting Open (a) and (b);
- (d) Receiving (a), (b) or (c).

3. All amateurs in Australia, Papua New Guinea and New Zealand may enter the contest, whether their stations are fixed, portable or mobile

4. Cross-band and cross-mode contacts are not permitted.

5. Call "CQ RD", "CQ CONTEST" or "CQ TEST".

6. On bands up to 30 MHz stations may be contacted once per band using each mode, ie twice per band using CW and Phone. No points will be awarded for contacts between stations in the same call area on HF.

7. On 50 MHz and above, the same station in any call area

may be worked using any of the modes listed at intervals of not less than two hours since the previous contact on that band and mode.

8a. Both single and multi-operator entries are permitted. To be eligible as a single operator, one person must perform all operating and logging activities without assistance, using his or her own callsign. More than one person can use the same station and remain a single operator providing that each uses his or her own callsign, submits a separate log under that callsign and does not receive operating or logging assistance in any way during the contest.

8b. Holders of more than one licence or callsign may submit a separate entry for each callsign held.

9a. Multi-operator stations are only allowed one transmitter per band/mode at any one time. Simultaneous transmissions on different bands are permitted. Simultaneous transmissions on the same band but different modes are permitted.

9b. Automated operation is not permitted. The operator must have physical control of the station for each contact. CW and voice keyers are permitted, as is the use of computers for logging.

10. For a contact to be valid, numbers must be exchanged between stations making the contact. Exchange RS for phone and RST for CW, followed by three figures commencing at 001 and incrementing by one for each successive contact.

11. Contacts via repeater (including satellite) are not permitted for scoring purposes. Contacts may be arranged through a repeater. Operation on repeater frequencies in simplex is not permitted.

12. Score: on 160 m two points per completed valid contact; on all other bands one point; on CW double points.

13. Logs should be in the format shown below and accompanied by a Summary Sheet showing

- call sign;
- name;
- address;
- category;
- section;
- for multi-operator stations a list of the operators;
- total score;
- declaration: I hereby certify that I have operated in accordance with the rules and spirit of the contest;
- signed; date.

14. Entrants operating on both HF and VHF are requested to submit separate logs and summary sheets for both
15. VK entrants temporarily operating outside their allocated call area, including those outside continental Australia as defined for DXCC, can elect to have their points credited to their home Division by making a statement to that effect on their summary sheet(s).
16. Send logs and summary sheets to: RD Contest Coordinator, A Petkovic VK6APK, 26 Freeman Way, Marmion, WA 6020, by Friday 19 September, 2003. Endorse envelope "Remembrance Day Contest" on front outside. Late entries will not be eligible.
17. Certificates will be awarded to the leading entrants in each section, both single and multi-operator; in each Division; P2 and ZL. Entrants must make at least 10 contacts to be eligible for awards, unless otherwise decided by the Contest Manager.
18. Any station observed as departing from the generally accepted codes of operating ethics may be disqualified.

Determination of Winning Division:

Unless otherwise elected by the entrant concerned, the scores of VK0 stations will be credited to VK7, and the scores of VK9 to the mainland call area which is geographically closest. Scores of P2, ZL and SWL stations will not be included in these calculations.

For each Division, an "improvement factor" will be calculated as follows:

- (a) For transmitting logs only, HF and VHF "Benchmarks" for each Division will be established, against which its performance for the current year is judged. The same formula will be used for HF and VHF, inserting the appropriate figures:

$$B = 0.25P + 0.75L$$

where B = this year's benchmark, P = last year's total points, and L = last year's benchmark.

- (b) For each Division, HF and VHF Improvement Factors will then be calculated. Once again the same formula will be used for both HF and VHF, inserting appropriate figures:

$$I/F = \text{Total points (this year)} / \text{Benchmark}$$

where I/F = improvement factor.

- (c) For each Division, the HF and VHF Improvement Factors will then be averaged:

$$\text{Overall I/F} = (\text{HF I/F} + \text{VHF I/F}) / 2$$

- (d) The Division which achieves the highest overall improvement factor will be declared the winner.

2004 Benchmarks

Div'n	HF	VHF
VK1	586	158
VK2	3909	131
VK3	2978	4581
VK4	3203	1687
VK5/8	3234	1711
VK6	2189	5583
VK7	1584	829

Receiving Section Rules

1. This section is open to all SWLs in Australia, Papua New Guinea and New Zealand. No active transmitting station may enter this section.
2. Rules are the same as for the Transmitting Section.
3. Only completed contacts may be logged, i.e. it is not permissible to log a station calling CQ.
4. The log should be in the format shown below.

Example Summary Sheet

Remembrance Day Contest 2004

Callsign: VK3VP
 Name: Ian Godell
 Address: 363 Nepean Highway, Chelsea, 3196
 Category: HF/Single Operator
 Section: Transmitting CW
 Total Score: 1000
 Declaration: I hereby certify that I have operated in accordance with the rules and spirit of the Contest.
 Signed: Ian Godell
 Date: 30 August 2004

Example Transmitting Log

Remembrance Day Contest 2004

Callsign: VK1XXX
 Category: HF/Multi Operator
 Section: Transmitting Phone

Time (UTC)	Band	Mode	Call	Nr Sent	Nr Rcvd	Pts
0801	14	SSB	VK2QQ	58001	59002	1
0802	14	SSB	VK8LL	59002	59001	1
0806	14	SSB	VK5ANW	59003	59001	1
0808	14	SSB	ZL2AGQ	58004	57004	1
0811	14	SSB	VK4XX	59005	59008	1

Example Receiving Log

Name/SWL Nr: L33071
 Category: HF
 Section: Receiving Phone

Time (UTC)	Band	Mode	Calling	Calling	Nr Sent	Nr Rcvd	Pts
0801	14	SSB	VK1XXX	VK2QQ	58001	59002	1
0802	14	SSB	VK1XXX	VK6LL	59002	59001	1
0806	14	SSB	VK5ANW	VK1XXX	59001	59003	1
0809	14	SSB	VK7AL	VK2PS	59007	58010	1

EOOC QRP Day Contest 2004

0800z - 1400UTC Friday, 6 August

Sponsored by the CW Operators' QRP Club in Australia and open to all AR operators, the objects are --

1. To work as many stations as possible in each hour,
2. To encourage contacts between VK, ZL and P29 stations,
3. To encourage the use and enjoyment of low power equipment, whether commercial or home-brewed,
4. To test the efficiency of your station under QRP conditions,
5. To compete for a certificate for best hour and/or best four hours,
6. (in VK) to prepare for the Remembrance Day Contest.

Entrants are encouraged to compete for all six hours, but to submit their logs on the basis of "best four hours". Logs will also be considered for highest score in any individual hour.

SECTIONS: HF and VHF

CATEGORY: Single Operator only.

HF

MODES: CW, SSB, PSK31, Mixed.

BANDS: All HF bands (no WARC) may be used, although it is envisaged that the bulk of operations will be on 80 and 40 metres.

EXCHANGE: RS(T) plus serial number beginning at 001 and incrementing by one for each contact.

REPEAT CONTACTS: In order to make greater use of available band space and time, repeat contacts with the same station will be allowed once each hour of the contest.

SPECIAL EVENT STATION: In 2004 VK3JS/QRP will act as a Special Event Station. It will operate on all HF bands in CW and SSB modes, but will submit a Check Log only. It is anticipated that VK3JS/QRP will work CW during the first half-hour and SSB during the second half-hour, but this will depend upon conditions on the night. VK3JS/QRP may be worked once only for the contest, and stations may claim 20 POINTS for the contact.

VHF

BANDS: 6 metres, 2 metre and 70 cm.

MODE: FM only.

EXCHANGE: RS plus serial number beginning at 001 and incrementing by one for each contact.

REPEAT CONTACTS: In order to make greater use of available band space and time, repeat contacts with the same station will be allowed once each hour of the Contest.

SCORE: One point per contact.

LOGS: Entrants may use separate logs for each band if they wish, but this is not a requirement. However, please arrange logs so that each hour is clearly distinguishable. Logs must show full details of time UTC, station worked,

band, mode, exchange and points claimed. Logs should be submitted for "best four hours" and scores will be considered for highest score for each separate hour.

Scoring:

Stations within VK/ZL/P29 score as follows --

VK-VK 1 point	ZL-ZL 1 points	P29-P29 1 point
VK-ZL 3 points	ZL-VK 3 points	P29-ZL 3 points
VK-P29 3 points	ZL-P29 3 points	P29-VK 3 points

Any DX stations (outside VK/ZL/P29) score 5 points.

Contact with Special Event Station VK3JS/QRP: 20 points

A BONUS of 20 POINTS may be claimed if the QRP station operated with an homebrew transmitter or transceiver.

FINAL SCORE is the sum of the total QSO points. Except for the use of homebrew equipment (see above), no multipliers apply.

LOGS: PLEASE USE SEPARATE LOGS FOR CW, SSB, PSK31 or MIXED MODES. Logs must show full details of time UTC, station worked, band, mode, exchange and points claimed. Arrange logs so that each hour is clearly distinguishable. Logs should be submitted for "best four hours" and scores will be considered for highest score for each separate hour. Please indicate clearly if you claim the 20 points bonus for homebrew equipment (once only for the Contest).

CERTIFICATES: Certificates will be awarded to the following:

- (i) first three placegetters in each mode who submit "best four hours" entries,
- (ii) the highest scorer in each hour in each mode in each call

GENERAL:

- (i) A SUMMARY SHEET, showing operator's callsign, name, address and points claimed should accompany the Log.
- (ii) Any station claiming to operate QRP MUST NOT exceed a maximum of five watt carrier to the antenna and should add /QRP after its callsign.

SEND Logs and Summary Sheet by mail to --

Ron Everingham VK4EV,
30 Hunter Street, Everton Park, Queensland, 4053,
Australia.

Logs may also be sent via email to vk4ev@computerguru.com.

CLOSED

All entries to be received no later than Friday, 20 August, 2004.

NOTES

NOTES

NOTES

Find Contest information at
<http://www.wia.org.au/contests/>

A visitor for lunch

The YLs at the VK5 luncheon in May were delighted to have an addition to their number. Val VK4VR and her OM, Brian VK4RX decided to book a trip on the "Ghan" so they timed the trip to allow them to attend the luncheons in Adelaide. While Val was in the City, Brian was at the AHARS luncheon in Blackwood.

Unfortunately Myrna VK5YW was unable to join us but Meg VK5YG, Maria VK5BMT, Jean VK5TSX and Christine VK5CTY (all old friends of Val) with Shirley VK5JSH, and Jeanne VK5JQ (new friends from the ALARAMEET in Murray Bridge) made up a good sized group.



Back row Maria VK5BMT, Jean VK5TSX, Meg VK5YG and JEANNE VK5JQ
Seated l-r Val VK4VR and Shirley VK5JSH.

A warning to us all

(this was sent to me recently by an ALARA member in VK4 - but there was a similar incident in VK5 - I think it contains a message for us all)

From: Red Cross Blood Service

A few weeks ago in a movie theatre in Melbourne a person sat on something that was poking out of one of the seats. When she got up to see what it was she found a needle sticking out of the seat with a note attached saying "You have just been infected by HIV". The Disease Control Centre in Melbourne reports many similar incidents have occurred in many other Australian cities recently. All tested needles are HIV Positive.

The Centre also reports that needles have been found in the cash dispensers in ATMs. We ask everyone to use

extreme caution when faced with this kind of situation. All public chairs/seats should be inspected with vigilance and caution before use. 17 people have been tested positive in the Western suburbs alone in the last 2 months!!! A careful visual inspection should be enough.

To a more frivolous world

Did you know that, for the first time in 160 years a new symbol has been added to the official Morse Code.

There is now a real code for the "@" sign as it is used in email addresses.

The code is dit dah dah dit dah dit.

Thought you would like to know about this, now that Morse Code is no longer an examination subject.

Have you discovered, as many people have done: now that it is not REQUIRED, more people want to learn and use CW? Strange, isn't it?

The story of Dot and John's trip to Queensland

As many of us heard about this trip I thought you would like to hear the whole story. It is interesting when you come and go between two places using different highways.

"In early May John and I visited our eldest son Ian and his family in their new home in southern Queensland.

We left in two cars, John drove Mandy's small manual car with absolutely no mod cons, but the company of Ian's two (snoring) pugs in the back. I drove the bigger automatic car with air con, cruise control, etc. etc. We had radios set up on a simplex frequency so we could keep in contact and, as we had to do the trip in the one day, to keep each other awake.

The drive up was via the New England Hwy to Tenterfield then the Bruxner Hwy to somewhere just past Tabulam where we turned into another road north through a mountain range until we met the Mount Lindesay Hwy. Now if you ever want to pretend you are in a grande prix, drive the southern end of

the Mount Lindesay Hwy, but not if your passengers get car sick! Ian's road joins the Mount Lindesay Hwy at Jimboomba. At Muswellbrook and north of Moonbi we had some pleasant company on 2m with 2 OMs who were scanning the bands. John and I kept up quite a stream of chatter between us reminding each other about speed and school signs.

Ian has 5 lightly treed acres and it would make a beautiful antenna farm, although they want to grow chooks and alpacas. The thought of moving up there crossed our minds but we would need to experience a summer before making a decision, autumn was lovely. Of course seeing Ian, Mandy and our granddaughter Imogen was great.

Graham VK4BB lived quite close so during one of our drives, we popped a note into his letterbox and very soon we had a phone call inviting us for morning tea. At his home we chatted about many subjects - radio and non radio while enjoying some home-made cookies.

Travelling home was down the Pacific Hwy and was a much faster trip but not as pretty. Both highways had roadworks which slowed us down. I can see us making the trip up there regularly from now on."

From Dot VK2DB and OM, John VK2ZOI

Other means of communication

Recently a number of YLs have been using Echolink and IRLP for some of the nets, with some success. To be able to have a radio conversation (these modes are only available to those who have legal radio licences) that is as clear as a telephone conversation is quite amazing.

They will never replace 'proper' radio contacts but they have their place as new 'toys'. Why don't you investigate and participate? There are several regular nets and many people whose call signs are listed as 'listening'. They are just waiting for your call.

Gridsquare Standings at 5 June 2004

144 MHz Terrestrial

VK2FLR	Mike	111
VK2KU	Guy	102
VK3FMD	Charlie	94
VK2ZAB	Gordon	78 SSB
VK2KU	Guy	69 SSB
VK3BRZ	Chas	68 SSB
VK3KAI	Peter	63
VK2DVZ	Ross	62 SSB
VK2TK	John	62
VK3EK	Rob	62 SSB
VK3CY	Des	58
VK3XLD	David	58 SSB
VK2E	Nail	54
VK3TMP	Max	53
VK3ZLS	Lee	51 SSB
VK3BDL	Mike	50
VK2DXE	Alan	47
VK2KU	Guy	47 Digi
VK3B.M	Garry	47 SSB
VK3MZ	David	47
VK7MQ	Rex	47
VK3WRE	Ralph	46 SSB
VK3KA	Peter	46 SSB
VK2DXE	Alan	46 SSB
VK3CAT	Tony	39
VK3KEG	Trevor	39
VK4TZ	Glenn	38
VK2TK	John	38 SSB
VK3ZUX	Dennis	33 SSB
VK4ZR	Rod	33
VK6-K	Don	33
VK3ZVC	Jim	31
VK7MO	Rex	30 SSB
VK3KME	Chris	28 SSB
VK2KRR	Leigh	27 FM
VK2TK	John	27 Digi
VK4FE	Chris	26 SSB
VK7MO	Rex	24 Digi
VK2TG	Bob	23 SSB
VK3YB	Phil	23
VK5ACY	Bill	23 SSB
VK3KA	Peter	21 Digi
VK3TLW	Mark	20 SSB
VK6KZ	Wally	20
VK3B9B	Brian	18
VK3AL	Alan	18 SSB
VK2EAH	Andy	16
VK6KZ/p	Wally	16
VK3ZVC	Jim	14 SSB

VK3DMW	Ken	13
VK2CZ	David	12
VK2EAH	Andy	12 SSB
VK2ZSJ	Steve	12
VK2EI	Nail	11 Digi
VK2DXE/p	Alan	10
VK3ANP	David	10
VK3BG	Ed	10
VK6HK	Don	6 Digi
VK2TWO	Andrew	5
VK3ZDR	David	5 SSB
VK2EAH	Andy	4 Digi
VK2AKR	Nail	3 Digi
VK2DXE	Alan	3 Digi
VK4TJ	John	3 SSB
VK2AKR	Nail	1 SSB
VK3XLD	David	1 Digi

144 MHz EME

VK2FLR	Mike	110
VK2KU	Guy	88
VK3CY	Des	70
VK7MQ	Rex	29
VK2KRR	Leigh	22
VK3KEG	Trevor	4
VK3FMD	Charlie	3
VK2DVZ	Ross	2
VK2DXE	Alan	2
VK3HZ	David	1

432 MHz Terrestrial

VK2ZAB	Gordon	57 SSB
VK3BRZ	Chas	49 SSB
VK3FMD	Charlie	47
VK3XLD	David	46 SSB
VK3ZLS	Lee	40 SSB
VK2KU	Guy	38
VK2KU	Guy	34 SSB
VK3EK	Rob	34 SSB
VK3HZ	David	32
VK3CY	Des	31
VK2DVZ	Ross	30 SSB
VK3B.M	Berry	29 SSB
VK3KAI	Peter	28
VK3BDL	Mike	26
VK3WRE	Ralph	26 SSB
VK3TMP	Max	25
VK3KEG	Trevor	21

VK2TK	John	18
VK2TK	John	17 SSB
VK7MO	Rex	16
VK3ZUX	Dennis	15 SSB
VK3CAT	Tony	14
VK4ZR	Rod	14
VK3TLW	Mark	13 SSB
VK6KZ	Wally	13
VK2KRR	Leigh	11 FM
VK4ZL	Glenn	11
VK3AL	Alan	10 SSB
VK3ANP	David	10
VK3BG	Ed	10 SSB
VK3YB	Phil	10
VK2TG	Bob	9 SSB
VK4FE	Chris	9 SSB
VK3KME	Chris	8 SSB
VK6KZ/p	Wally	8
VK3B9B	Brian	7
VK2FLR	Mike	6
VK2KU	Guy	5 Digi
VK3BRZ	Chas	4 Digi
VK3XLD	David	4 Digi
VK3ZVC	Jim	4 SSB
VK2CZ	David	3
VK2TWO	Andrew	3
VK3KAI	Peter	3 Digi
VK7MO	Rex	3 Digi
VK2DXE/p	Alan	2
VK4TJ	John	2 SSB
VK2AKR	Nail	1 SSB
VK2TK	John	1 Digi
VK3DMW	Ken	1

432 MHz EME

VK4KAZ	Allen	14 CW
VK3FMD	Charlie	5
VK3HZ	David	1
VK7MO	Rex	1

1296 MHz

VK3XLD	David	33 SSB
VK3BRZ	Chas	32 SSB
VK3FMD	Charlie	32
VK2ZAB	Gordon	28 SSB
VK3ZLS	Lee	26 SSB
VK2KU	Guy	25
VK2KU	Guy	22 SSB
VK3EK	Rob	20 SSB

VK3KWA	John	19
VK3KAI	Peter	16
VK3WRE	Ralph	16 SSB
VK2DVZ	Ross	15 SSB
VK3KAI	Peter	15 SSB
VK3BDL	Mike	12
VK3B.M	Berry	12 SSB
VK3TMP	Max	11
VK2TK	John	10 SSB
VK4ZR	Rod	10
VK7MO	Rex	10
VK3HZ	David	8
VK3TLW	Mark	8 SSB
VK3AL	Alan	7 SSB
VK2CZ	David	5
VK3ZUX	Dennis	5 SSB
VK3ZVC	Jim	5
VK6KZ/p	Wally	5
VK3BG	Ed	4 SSB
VK3BPV	Shane	4
VK3YB	Phil	4
VK3ZVC	Jim	4 SSB
VK6KZ	Wally	4
VK2KU	Guy	3 Digi
VK3B9B	Brian	3
VK3KEG	Trevor	3
VK2DXE/p	Alan	2
VK2FLR	Mike	2
VK3CY	Des	2
VK3KAI	Peter	2 Digi
VK3KME	Chris	2 SSB
VK3XLD	David	2 Digi
VK4TJ	John	2 SSB
VK3DMW	Ken	1
VK3ZVC	Jim	1 Digi
VK4ZL	Glenn	1
VK7MO	Rex	1 Digi

2.4 GHz

VK3BRZ	Chas	11 SSB
VK3XLD	David	11 SSB
VK3WRE	Ralph	9 SSB
VK3FMD	Charlie	8
VK3KAI	Peter	7 SSB
VK3EK	Rob	5 SSB
VK6KZ	Wally	4
VK3B.M	Berry	3 SSB
VK3KAI	Peter	2 Digi
VK4ZR	Rod	2
VK3BG	Ed	1 SSB
VK3TLW	Mark	1 SSB

VK3ZUX	Dennis	1 SSB
VK4ZL	Glenn	1

3.4 GHz

VK3FMD	Charlie	8
VK3WRE	Ralph	8 SSB
VK3KAI	Peter	8 SSB
VK3XLD	David	4 SSB
VK6KZ	Wally	4
VK3EK	Rob	3 SSB

5.7 GHz

VK3FMD	Charlie	10
VK3WRE	Ralph	9 SSB
VK3KAI	Peter	7 SSB
VK3XLD	David	5 SSB
VK6KZ	Wally	4
VK3B.M	Berry	2 SSB
VK3EK	Rob	2
VK8BHT	Nail	2
VK3KAI	Peter	1 Digi
VK3ZUX	Dennis	1 SSB

10 GHz

VK3FMD	Charlie	9
VK8BHT	Nail	8
VK3WRE	Ralph	9 SSB
VK3KAI	Peter	7 SSB
VK3XLD	David	7 SSB
VK3EK	Rob	5 SSB
VK6KZ	Wally	5
VK3TLW	Mark	3 SSB
VK3ZVC	Jim	3 SSB
VK2EI	Nail	2
VK3B.M	Berry	2 SSB
VK3ZLS	Lee	2 SSB
VK7MO	Rex	2
VK3BG	Ed	1 SSB
VK4ZR	Rod	1
VK4ZL	Glenn	1

24 GHz

VK8BHT	Nail	3
VK2EI	Nail	2
VK6KZ	Wally	2
VK3FMD	Charlie	1

474 THz

VK7MO	Rex	1
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Additions, updates and requests for the guidelines to Guy VK2KU, vk2ku@tsn.cc, or by mail (VTHR Group). The guidelines (and the latest League Table) are also available on the website of the NSW VHF Dx Group at www.vhfdx.org - click on Gridsqueres.

Next update of this table will be in September 2004.

Stations who do not confirm their status for more than 12 months may be dropped from the table.

Six-monthly update of operational amateur radio satellites

In consideration of the diminishing list of truly "operational" satellites at present, I have decided to change the format of this segment a little. I'll begin with a detailed list of the satellites that can reasonably be expected to be there for the working when you decide to have a go. The rest will be broken up into those with known restricted access and those listed as "semi-operational" as this last category seems to imply that they will not be there when you decide to have a go!

ARISS

The ARISS station on board the International Space Station is turned on but direct contact with the crew has been quite rare in recent months. The packet radio digipeater is turned on but my latest information is that the Mailbox is off.

Worldwide packet uplink:	145.990 MHz FM
Region 1 voice uplink:	145.200 MHz FM
Region 2/3 voice uplink:	144.490 MHz FM
Worldwide downlink:	145.800 MHz FM
Russian callsigns	RS0ISS, RZ3DZR
USA callsign	NA1SS
Packet station mailbox callsign	RS0ISS-11
Packet station keyboard callsign	RS0ISS-3
Digipeater callsign	ARISS

FO-29 (JAS-2) is operational

but may be operating in either mode.

Voice/CW Mode JA

Uplink: 145.90 to 146.00 MHz CW/LSB
Downlink: 435.80 to 435.90 MHz CW/USB
Beacon: 435.795 MHz

Digital Mode JD

Uplink: 145.850 145.870 145.910 MHz FM
Downlink: 435.910 MHz 1200-baud BPSK or 9600-baud FSK
Callsign: 8J1JCS
Digitaiker: 435.910 MHz

SO-50 is operational.

(See detailed notes below).

Uplink: 145.850 MHz (67.0 Hz PL tone)

Downlink: 436.795 MHz (Note the correction to this frequency in the notes below).

SO-50 is in good health and it is easy to access the satellite. However, SO-50 needs to be opened by a control station before you can operate. The repeater is available to amateurs worldwide as power permits, using a 67.0 hertz tone on the uplink, for on-demand activation. (See detailed notes below).

UO-11 is operational

But remember it was never designed as a transponder satellite. Being a "beacon only" satellite it is of prime interest to telemetry fans.

Downlink: 145.826 MHz FM (1200-baud AFSK)

Mode-S Beacon: 2401.500 MHz

The beacon operates under control of the watchdog timer, approximately 10 days ON followed by 10 days OFF. A new cycle is scheduled to begin on 1st June so you can do your sums from then on (give or take a day or two). Users of OSCAR-11 should note that the date in the telemetry is now advanced by FOUR days. The time is advanced by 19.8 minutes, and this error is increasing by about one minute per year. The Mode-S beacon is ON continuously, even when the VHF beacon is OFF, nominally transmitting an unmodulated carrier on 2401.5 MHz. This beacon is a useful weak signal source for those testing mode-S converters. Users should note that the polarisation of OSCAR-11 is left circular so if you are testing your Oscar-40 downlink you will need to change the antenna to LHCP for the test. If your "S" mode gear is working very well you may be able to hear some very low level modulation on the carrier. Go to the top of the class if you can hear the modulation!

UO-22 is going well

and is providing good strong signals and high download efficiencies. The bulletin board is busy with new files appearing daily.

Uplink: 145.900 FM 9600-baud FSK

Downlink: 435.120 MHz FM

Broadcast Callsign: UOSAT5-11

BBS Callsign: UOSAT5-12

That ends the list of reliable satellites. Those listed in the following group are restricted in operation.

AO-7 switches on when in sunlight.

FO-20 is listed with a question mark. I'm not sure what that means but I would not be optimistic in looking for it.

NO-44 (PCsat) is very restricted in operation due to a solar cell failure. You really need to be watching the AMSAT-BB to keep up with this one. It is often listed as being OK but a day or two later it will fail.

NO-45. Again Sapphire is listed as operational but users are requested not to use the bulletin board as it locks out ground access to the satellite's CPU. The UI digipeater is reported to be available on 145.945 MHz.

The following (sadly) rather long list shows those satellites that have either partially or permanently failed or have been turned off or resumed commercial service - but are still in orbit.

AO-10, RS-12/13/15, UO-14, LO-19, KO-23, KO-25, PO-34, SO-33, UO-38, AO-40, SO-41, SO-42, MO-46, AO-49.

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. No formal application is necessary for membership and no membership fees apply. Graham maintains an email mailing list for breaking news and such things as software releases. Members use the AMSAT-Australia HF net as a forum.

AMSAT-Australia HF net.

The net meets formally on the second Sunday evening of the month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC with early check-ins at 0945 UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC with early check-ins at 0845 UTC. All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,
9 Homer Rd,
Clarence Park, SA. 5034
Graham's email address is:
vk5agr@amsat.org

Interference from long-range cordless phones

The old problem of non-amateur operation on satellite frequencies has reared its head again. Once upon a time it could be attributed to the illegal use of amateur radio gear by untrained and largely unaware operators. The easy availability of "long-range" cordless phones in some countries has lifted the bar to a new level. These units have a base station running some 4 watt, often into high gain omni-directional antennas. The remotes run around 2 watt. The legality or otherwise of

importing and distributing these devices may still be a matter of debate, but there are some sections of the community that seem only too willing to take up the technology if it is offered, and ask no questions. In many cases the users would not be aware of any restrictions on spectrum use. The frequencies used by many of the devices in question make interference to LEO satellites with 2 metre uplinks very likely. There have already been instances of these phones being found in use here in Australia but

we are fortunate in this part of the world to have authorities who would view this situation very dimly indeed and insist on users meeting our high standards. Our relative isolation helps too. Many countries have to put up with "over-the-border" activities falling into the above categories. Most LEOs these days are in relatively low orbits so interference from outside Australia is less likely. Satellites in orbits like AO-7 however are much more susceptible to this kind of interference.

Insertion loss in co-ax adaptors at higher frequencies

I've often wrestled with this question so I thought it might be worth a mention. Not being an electronics technician by calling, I have always tried to err on the side of caution when "connecting things up" in the realm of VHF and UHF. I did however have the enormous advantage of counting a number of experienced technicians among my friends. They too, I noted, erred on the side of caution.

So, what are the rules? First, use as few connectors or adaptors as possible. A little foresight comes in handy here. Make sure you fit the correct 'gender' of connector to the gear when it is being constructed or choose the right ones if you are buying. Otherwise you could be reaching for otherwise unnecessary adaptors to connect things up. I've seen the time when I've had to go right down from "N" type to "UHF" to "BNC" when connecting up someone else's bit of gear to something of mine. You can easily end up with a string of adaptors where proper planning could have made the connection with no adaptors at all.

The second rule is to stick with "N" type connectors if at all possible and certainly in critical circuits. BNC are next best but they are not waterproof and are more easily damaged. Don't discount PL-259s and SO-259s if they are of good quality. They will do the job at 145 MHz and can be pressed into service without too much fuss at 435 MHz but forget them after that. There are more exotic connectors than "N" type of course but they are usually more expensive or

restrict the user to small or odd diameter co-ax cable.

The third rule is to learn how to discriminate between good and not-so-good connectors and adaptors, especially if you are in the habit of stocking up at hamfests. Avoid bright, shiny, nickel or chrome plated units. They may have inferior insulation and losses could be intolerable above 70cm. Pay a little extra and go for silver plated connectors and adaptors. This is particularly important if you are going to use PL / SO series at UHF. Go for the silver plated ones every time. The better units will have good quality insulation - and in the case of "N" type and BNC - they should also sport gold plated centre pins and sockets. Fourthly, learn to tell the difference between 50 ohm and 75 ohm units. The only outward difference is in the diameter of the pins and sockets. Make a wrong choice here and you can easily ruin a perfectly good connector by plugging in a 'wrong-un'. If in doubt - ask before you commit yourself to the purchase.

Now, as a former Prime Minister used to say, having said that, now let me say this: Don't overdo the caution business to the stage of paranoia. The average UHF or microwave satellite receive or transmit set up may only involve two or three such connectors or adaptors in the critical circuitry - and you generally have a few dB up your sleeve. The critical circuitry is that between the

antenna and the first RF amplifier in the receive chain and between the final RF amplifier and antenna on the transmit side. In both these situations make a practice of using as few connectors and adaptors as possible and using the best quality you can afford. Piping the whole thing up with the most expensive machine-crimped "N" types may well be called for in commercial airport radar installations but you could waste a lot of money chasing a rainbow in amateur practice.

Most good quality connectors and adaptors have losses measured in the low or fractional dB range up to several GHz and you may need just a few of these to make a very efficient installation. Losses are not the only consideration. Connectors immediately on either side of a sensitive receive pre-amplifier need careful selection. The losses may only amount to a fraction of a dB but the possibility of a wrong choice upsetting the impedance and thence the noise figure can be devastating to an otherwise good installation. Unlike EME where the operator is always chasing the errant dB, the satellite game is not usually as stringent. That may change as frequencies rise higher into the microwave region, 5.6 or 10 GHz is a different story to 145 or 435 MHz. Just keep the above few rules at the back of your mind when planning your station or collecting for your odds-'n'-ends box.

continued next page

Spotlight on SWLing

Robin Harwood VK7RH

You may recall that I reported that the former Christian Science shortwave senders in Cypress Creek, South Carolina, were switched off in late March. Well they are back on-air with new owners and not surprisingly, World Harvest Radio (WHR) in South Bend, Indiana now uses these senders in addition to their sites in Noblesville, Indiana, Maine and Hawaii. The Maine senders also were originally part of the World Service of the Christian Science Monitor and now have been linked up again through the evangelical World Harvest Radio Network. WSHB is heard well here on 7535 up to 1200 UTC. WHRA is in Maine and WHRI in Indiana. KWHI is in Hawaii.

Recently I was tuning across the 19-metre band and heard a station with an evangelical Christian program in English. It was on 15748 and my initial thought it was an off-channel American gospel station. The time was just before 0200, which corresponded to the local midday here but I was somewhat surprised to find that it was the Asian Service of the Sri Lankan Broadcasting Corporation in Colombo. They had a

very interesting regional news bulletin in English, at 0200. However the signal did drop rather quickly after 0215.

I also note that Australian Christian evangelical station HCJB-Australia, based in Kununurra WA, recently received approval to acquire adjoining land as well as additional towers. The ABC reported that there was some limited local opposition because of the fear that broadcasting to Islamic nations and populations may make Kununurra a possible terrorist target. However this objection was not upheld and the approval motion was passed comfortably by the local shire council.

HCJB-Australia has made some alterations to their broadcasting times and they now broadcast to the South Pacific from 0700 to 1000 UTC on 11750 and to Asia from 1000 to 1200 on 15425. I also came across the release to South Asia on 15560 at 0225 and the signal level here was superior to that at 0700. I also am informed that they are only running 50 kW on 11750, whilst on 15 MHz they are running almost the full 100 kW.

Thanks to the assistance of Mark,

VK7KMA, I am once again back on 2 metre and on the local repeater. It has been many years and I certainly got a shock, hearing Canadian stations come via the IRLP node. I have yet to work them myself, being just content to talk to the locals at this stage.

A Catholic network recently commenced operations in Niugini and recently opened a small shortwave sender in Vanimo on 4960. It is rated at a kilowatt and they hope to run skywave and not broadcast outside of the nation. However shortwave signals do propagate well, if conditions do permit. I am informed that the Vanimo sender has already been observed on the West Coast of the United States. The main Niugini station on 4890 also from Vanimo, carries the Government network with a 100 kW sender which is heard throughout the world.

Well, that is all for this month. Don't forget you can forward your news and comment to me at vk7rh@wia.org.au or via Australia Post to 20/177 Penquite Road, Norwood, Tasmania 7250.

73 from VK7RH.

MF

AMSAT continued

BlueSat latest

The BlueSat team at the University of New South Wales have produced a very informative web site. Point your browser at <http://www.bluesat.unsw.edu.au/>. The presentation is worth downloading even if you have a slow

dial-up connection like mine so don't be tempted to hit the "skip movie" button. The site contains many links that are worth following and you can get a pretty good idea of what this satellite will do

for amateur radio and for University research. The list of sponsors make interesting reading. The project deserves our support.

SO-50 over Australia

I received a letter from Noel VK3FGN with the latest information regarding SO-50. Noel is one of a group of VKs who work this satellite regularly. Noel activates SO-50 on 90% of daylight passes and some nighttime passes. He listed more than a half-dozen VK stations and a couple of ZLs who are regular operators on this bird. Signals can peak as high as S 9 with averages around S 4 when the bird is out over the Tasman Sea and in a good position for VK/ZL contacts. Noel reports that 10 minute contacts between his QTH in Mildura

and Melbourne are not uncommon. He confirms my own experience with UO-14 and similar satellites that a good tracking antenna is almost essential for consistent results, a mast-mounted pre-amp also contributing to good results. I certainly echo that. If you are going to have a serious look at SO-50, Noel cautions that the downlink frequency is approximately 4 kHz low. Please be sure to make this offset adjustment to any auto-tune facility you use or remember to take it into account if you manually tune the radios. An error of

4 kHz is enough for you to miss the signal completely if it is weak. Noel also mentions that - depending on the gain of your antenna system - the pointing accuracy is a vital component of success. Check your system regularly and make sure it tracks to a degree or two over the whole of a pass. Plus/minus 5 degrees should be considered a minimum. Thanks for the very comprehensive report Noel. Let's hope it results in some increased interest in SO-50.

AR

David A. Pilley VK2AYD
davpil@mdcoast.com.au

Germany

Propagation studies

Volker Grassmann, DF5AI, says over the VHF Reflector that he recently updated his "Amateur Radio Propagation Studies" web site. Features now include a countdown for the 2004 sporadic E season, a discussion of thunderstorm effects on the ionosphere, notes on the people behind VHF DXing and much, much more. The page is in cyberspace at www.df5ai.net. Volker says come over and spend some time at the site.

(ARNNewsline)

Greece

2004 Summer Olympics Award Series from Greece.

The Greek R.A.A.G. has the certificates featuring historic images of Greek statuary/friezes of sports events from the country which originated the Olympics. Check out www.dxawards.com/inet2004.htm A special "countdown on the air" program will be active from many Greek radio amateur until 13 Aug the starting day of the OLYMPIC GAMES 2004. Nine (9) Multi operators special Event Stations as SX9A, SX8A, SX7A, SX6A, SX5A, SX4A, SX3A, SX2A and SX1A from the nine (9) Greek regions are active now until 12 Aug. These stations will be on the air every 10 days one by one, to celebrate GAMES. NO QSL manager, QSL via Greek Bureau ONLY. More info, calendar and on-line logs for the "2004 OLYMPIC GAMES Countdown on the air program" you will find at: <http://www.qsl.net/sv2ngct/sx.htm>

Olympic Prefixes for Foreign Hams

The Greek Communications Authority has announced that Greek radio amateurs may use the optional SX2004 or SY2004 call sign prefix from 1 June 2004 until 15 November 2004 to commemorate the Athens Olympic Games and Paralympic Games 2004. Also foreign radio amateurs, as visitors in Greece, from CEPT countries or from countries with reciprocity (U.S.A., Canada, Cyprus, Switzerland and Australia) can use the special prefix J42004 from 1 Aug 2004 until 15 November 2004 without any licence from Greek authorities. All others need communicate with Greek

authorities for special permission. Note that you can find the official website of ATHENS OLYMPIC GAMES 2004 at: <http://www.athens2004.com> (SV1CNS-VASSILIS - (Author SV2AEL-SAVAS))

Iran

IARU presents an amateur radio administration course in Iran

In response to an invitation from the administration of the Islamic Republic of Iran, Fred Johnson ZL2AMJ representing the IARU Region 3 and Daniel Lamoureux VE2KA representing the IARU International Secretariat visited Iran to present a three-day Amateur Radio Administration Course, 26 to 28 April 2004.

Since the early 1980s this course has been conducted by IARU in various forms in countries all over the world and in response to invitations from administrations to train regulators and prospective regulators in the administering of the amateur service and amateur satellite service. Related objectives include managing disaster relief communications and organising an amateur radio society.

The course in Tehran was arranged by Mr T. Shafiee and Mr M. Zomorodi of the Directorate General of Telecommunications. An excellent training room was provided with full support facilities including a data projector and access to a photocopier. The course was presented using PowerPoint displays prepared by IARU and each of the 16 participants received printed copies of the displays, documents and two CD-ROMs with documentation about amateur radio.

The two IARU visitors had discussions with many radio amateurs in Tehran, some of whom attended the course. The course participants visited EP3PTT, a station established in the Ministry's office premises in Tehran. The equipment in this station was received by Iran from the IARU Region 3 Stars*** programme. Licensed Iranian operators may operate it by arrangement.

There have been earlier amateur radio societies in Iran but there has not been an IARU member society. An amateur radio "club", a social meeting group, presently meets in Tehran.

The course has been a memorable experience for the two IARU visitors who have been very warmly received. Contact between IARU and the amateurs and the administration of Iran is to continue and further amateur radio information is to be provided.

(NZART News)

Europe

More countries drop CW

More restructuring has taken place in Europe. The RSGB News Service reports that Finland has now officially dropped the Morse code requirement for that nation's hams to have access to the high frequency bands. RSGB says that Finland actually deleted the Morse requirement on 1st November, 2003. Now, with the latest rules revisions there are now only two classes of amateur licence in that European nation.

Also from RSGB word that former French Class 2 licensees with F1 and F4 callsign prefixes are now being heard on the High Frequency bands.

According to the French national amateur radio society, this change was implemented on May 16th.

But CW is far from dying or dead on the other side of Europe.

In fact the fourth European High Speed Telegraphy Championships takes place 15th through 19th September in Montenegro and Serbia.

(GB2RS)

New Zealand

Goodbye to Morse

Finland and France are not alone in saying goodbye to Morse code testing. So has a nation down-under.

On June 4th New Zealand's Telecommunications regulators issued a decree that says Morse proficiency testing has ended and that New Zealand Limited Class operators will soon have access to the high frequency bands. In fact, regulators have decided to upgrade Limited Class operators to the New Zealand General Class.

According to the notice, operators will not be required to change their callsigns or take any other action. The new rules went into effect on June 17th.

(ZL2BHF)

ar

Adelaide-London

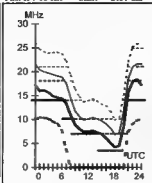
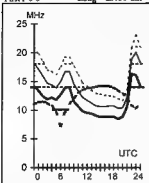
132

Brisbane-Honolulu

21

First F 0-5 Long 23755 km

First F 7-10 IE0 Short 2131 km



July
2004

T index: 39

Legend

Frequency scale
Time Scale

UD
 E-MUF
 OMF
 F-MUF
 ALF
 >10%
 >50%
 >80%

HF Predictions

by Evan Jarman VK3ANI

34 Alandale Court Blackburn Vic 3130

These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.

These frequencies as identified in the legend are:-

- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable. The path, propagation mode and Australian terminal bearing are also given for each circuit.

These predictions were made with the ionospheric Prediction Service program, ASAPS Version 4

Adelaide-London

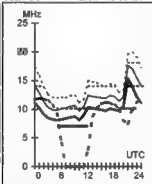
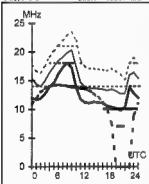
312

Brisbane-Montevideo

164

First F 0-5 Short .6269 km

First F 0-5 Short 12432 km



Canberra-Auckland

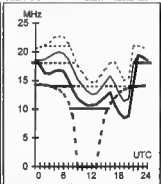
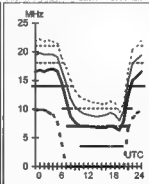
192

Darwin-Darwin

44

First F 6-8 IE0 Short 2300 km

First F 0-5 Short 12282 km



Adelaide-Los Angeles

86

Brisbane-Tokyo

346

Canberra-Honolulu

60

Darwin-Singapore

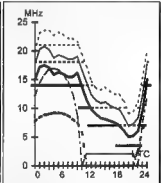
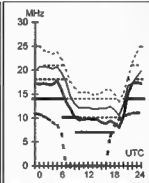
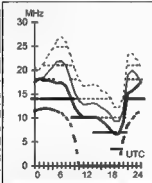
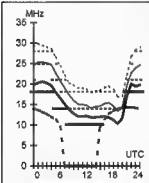
295

First F 0-5 Short 13159 km

Second 3F6-11 3E0 Short 7159 km

Second 4F8-13 4E0 Short 8407 km

Second 2F12-18 Short 3351 km



Adelaide-Pretoria

238

Brisbane-Wellington

133

Canberra-Paris

130

Darwin-Vancouver

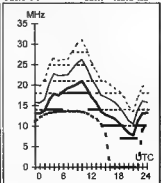
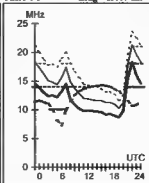
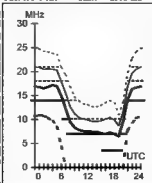
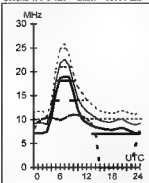
42

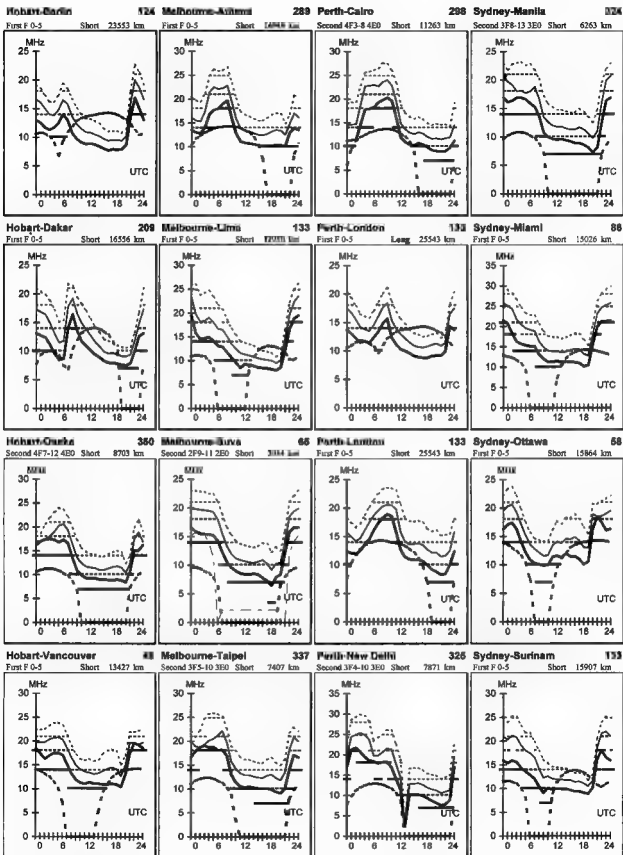
Second 4F5-6 4E0 Short 10064 km

First F 5-6 IE0 Short 2508 km

First F 0-5 Long 23100 km

First F 0-5 Short 12212 km





FOR SALE ACT

• Linear 2 m suit h/h \$70 Workshop manual and handbook Kenwood TS-440 \$50. Yaesu FRG-9600 VHF/UHF receiver \$350. Yupiteru 7000 scanner \$275. Kenwood TS-520 \$280 (w/2 new tubes \$320). Kenwood SP-820 \$85. Military amplifier AM-4306/GRC \$40. All plus postage. VK1CJ QTHR Phone 02 6251 1816

WANTED ACT

• 70 cm base station 10 watt out on SSB consider any brand. ICOM IC-1296 multi-mode transceiver VK1CJ QTHR Phone 02 6251 1816

FOR SALE NSW

• Complete package satellite station, ICOM IC-271A ICOM IC-471A, Satttrak 3 controller, Tiny 2 1200/9600 baud TNC, G5400B Az/El ant control, 80 cm dish & SSB 2.4 GHz converter, 2 m/70 cm ants, G3RUH 400 baud PSK decoder, 7 m tiltover tower, anyone interested? ART VK2AS Phone 02 9416 7784.

• Yaesu FT-920, new in box, transceiver plus 6 metre, price \$2000. Jeff, Phone 0415 287 145,

• Yaesu FT-847 HF 6 m/2 m/70 cm, DSP, New with manuals \$2500 ono. 25 amp supply \$220 ono. Dot, Phone 02 6786 6649

• Shack clearout: Allnco 2 A power supply \$350. Azden PCS-5000 2 m FM Xcvt \$450. DSE AG-2800A AF oscillator \$75. DSE/EA spectrum analyser \$100, ICOM IC-490 70 cm all-mode Xcvt \$350, ICOM IC-605 6 m all-mode Xcvt \$450. ICOM IC-726 HF 6 m Xcvt \$800. ICOM IC-735 HF Xcvt & AT-150 ATU \$800. Kenpro KR-5500A Az. El. controller \$850. Kenwood TS-4305 HF Xcvt \$450. Kenwood TS-440S HF Xcvt & power supply \$850. Kenwood TR-9139 2 m all-mode

Xcvt \$300. LT PC-1200 1250 MHz counter \$150. Nemc Lambda 22 A pwr supply \$40. Tokyo Hi-Power HL-82V 2 m amp \$250. Tokyo Hi-Power HL-160V 2 m amp \$600. Tokyo Hi-Power HL-180V 2 m amp \$650. Tono 5000E keyer/modem \$600. Tiro SG-402 signal generator \$100 2 X 4/400A 2kW HF linear home brew \$600. Bob VK2CAN, Phone 02 9416 3727

• HEATHKIT SB-200 80 m to 10 m HF 400 W linear amp. has 2 x 572B triodes. Working cond \$550 ono. Dave VK2AWD, QTHR, Phone 02 9487 1840, dave0005@bigpond.net.au

• Quantity of 6 ft Daeko triangular tower sections \$50.00 each or near offer +freight if required. Colin MacKinnon VK2DYM, 104 Pebbly Hill Rd, Maraylya 2765. Phone 02 4573 6276, email cmac@zip.com.au

• Swan MK II Linear Amplifier. 80 m to 10 m. Loads along at Australian (and USA) power limits. Comprises a fan cooled power supply and a separate fan cooled RF unit using two 3-500Z tubes. Note: This is a serious amplifier with potentially dangerous voltages inside so must be treated with respect. Weight of PSU 15 kg. RF unit 9 kg. \$800 or near offer plus freight. Colin MacKinnon VK2DYM, 104 Pebbly Hill Rd, Maraylya, Phone 02 4573 6276

• Triangular, galvanised, tiltover/windup mast Approx. 16 m. very good condition: Deceased estate VK2ZHT. Offers invited. Ron VK2GPS Phone 02 9625 8035, vk2gps@hotmail.com

WANTED NSW

• Collins ART-13 parts or complete radio for restoration project. Phone 02 4473 9010 or 0427 624 028

• Seeking any information on transmitter/radio Marconi CNY2. Contact Herman VK2IXV, Phone 02 4237 5201 or herman@smatchat.net.au

FOR SALE VIC

• Garage Sale Radio Station ICOM IC-737 HF transceiver & manual. DSP-9 timewave Emtron antenna tuner EAT-3000A. Emtron power supply Keyer MFJ-401B. Vibroplex iambic paddla. SWR/wattmeter MFJ 815B. Drake low pass filter. Nally tower 1 stage, with 6.5 metre aluminium scaffolding pipe. Antennas, baluns, coax, connectors, etc. Diamond F-23A antenna - 2 m 5/8 wave 3-element vertical. David VK3DNG QTHR Phone 03 9859 4698, email darodda@easck.com.au

• Kenwood R-5000 HF communications receiver, good condition, \$290. Phone Terry VK3QBD Phone 03 9315 0186 (evenings).

• Yaesu FT-990 HF transceiver, 100 W 160-10 MHz gen cov RX, Modes LSB USB CW AM FM RTTY Pkt, Auto ant tuner, internal electronic keyer, extra SSB filter, operating and workshop manuals. - 240 V ac operation ser.no 1L090215. With Yaesu MD-1 Dynam.c desk mic. Excellent condition. Suit upgrading amateur \$1350 ono vk3amh@datafast.net.au QTHR Phone 03 5562 3335.

FOR SALE SA

• Codan 8528 remote head transceiver serial number 89209, with auto tune 855A antenna. Fitted with amateur bands 80,40,30,20,17,15 metre. All VKS 737, RFDS, Radtel and CB frequencies. \$1500 ONO. VK6HRS Phone 0418 895 090.

WANTED SA

Digital ICs 74HC 4060B and 74HCT4060B MUST be PHILIPS. A small quantity of each required but prepared to buy a "tube" if necessary. Eugenio Muratore Phone 08 8337 6887 AH

FOR SALE WA

• Yaesu FT-1000MP deluxe 100 W HF transceiver. 1.8 to 28 MHz amateur bands, p us general coverage. Built-in ac power supply. Serial no. 6G110031 Fitted with dual 2.4 kHz and 500 Hz IF filters and Inrad noise reduction/improved sensitivity IF board. FH-1 remote control keypad. Complete with microphones and manual. immaculate. \$2,300. Steve VK6VZ, Phone 08 9298 9330 or email sruve@inet.net.au

WANTED WA

• Power transformer for Yaesu YD-901 multiscope or a complete unit. Also a 9 MHz HC49/U crystal. VK6ABS Bob. Phone 08 9075 4136 QTHR

MISCELLANEOUS

• The WIA QSL Collection (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose Vic 3765, tel (03) 9728 5350

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- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
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- QTHR means the address is correct in the current WIA Call Book.

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Remembrance Day
contest

21/22 August:
International
Lighthouse/Lightship
Weekend

28/29 August
ALARA contest

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a not-for-profit site that is a search
engine for hams

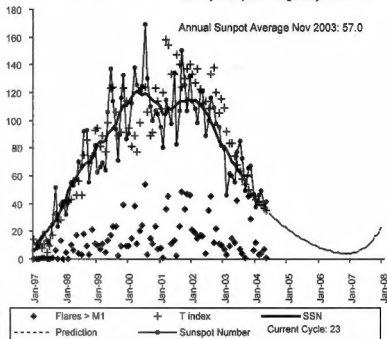
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Sunspot Numbers

Monthly Sunspot Average May 2004: 41.5

Annual Sunspot Average Nov 2003: 57.0



Drawn from monthly data provided by the Ionospheric Prediction Service

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State/Division Directory

The Amateur Radio Service exists for the purpose of self training, intercommunication and technical investigation. It is carried out by amateurs who are duly authorised people interested in radio technique solely with a personal aim and without pecuniary interest.

The Wireless Institute of Australia represents the interests of all radio amateurs throughout Australia. All enquiries should be directed to your local Division.

The new fees for WIA membership will be \$75 for full members (F grade), \$70 for pensioners and students (G and S grade), and \$50 for membership without 'Amateur Radio' (X grade)

Broadcast schedules All frequencies MHz. All times are local.

There is no longer a VK1 Broadcast but the VK1 Email News is available by request to president@vk1.wia.ampr.org

Revised arrangements for membership of the new Canberra Region Amateur Radio Club will be advised in due course

VK1 Australian Capital Territory
GPO Box 600, Canberra ACT 2601
President Alan Hawes
Secretary Deane Walkington
Treasurer Bob Howle

VK1WX
VK1DW
VK1HBB

VK2 New South Wales
109 Wigram St, Parramatta NSW
(PO Box 9432, Harris Park, 2150)
(Office hours Tue., Thu., Fri., 1100 to 1400 hrs.)
Phone 02 9689 2417
Web: <http://www.wianew.org.au>
FreeCall 1800 817 644 (NSW only)
e-mail: vk2w@wianew.org.au
Fax 02 9633 1525
President Chris Flak
Secretary Michael Corbin
Treasurer Noel May

VK2QV
VK2YC
VK2YOM

VK2WI transmits every Sunday at 1000 hrs and 1930 hrs on some or all of the following frequencies (MHz): 1.845, 3.585, 7.146, 10.125, 14.170, 18.120, 21.170, 24.950, 28.320, 29.170, 52.150, 52.525, 144.150, 147.000, 432.150, 438.525, 1273.500. Plus many country regions on 2m and 70cm repeaters. Highlights are included in VK2AWX Newcastle news Monday 1930hrs. on 3.593, 10 metres and local repeaters. The text of the bulletins is available on the Divisional website and packet radio. Continuous slow more transmissions are provided on 3.699 and 145.650. VK2RSY beacons on 10m, 6m, 2m, 70cm and 23cm. Packet on 144.850.

VK3 Victoria
40G Victory Boulevard Ashburton VIC 3147
(Office hours Tue 10.00-2.30)
Phone 03 9885 8261
Web: <http://www.wiavic.org.au>
Fax 03 9885 8298
e-mail: wiavic@wiavic.org.au
President Jim Linton
Secretary John Brown
Treasurer Jim Baxter

VK3PC
VK3JB
VK3DBQ

VK3BWI broadcasts on the 1st Sunday of the month at 1030 and 2000 hours. Primary frequencies are 3.615, 7.065, 10.130, FM repeaters VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, VK3RMU 438.075. The broadcast can also be heard on the Saturday night at 2000 hours before the 1st Sunday. Major news appears on the packet radio network under the callign VK3ZWI, and the WIA Victoria website.

VK4 Queensland
PO Box 199, Wavell Heights, Qld. 4012
Phone 07 3221 8377
e-mail: office@wiaq.powerup.com.au
Fax 07 3286 4929
Web: <http://www.wiaq.org.au/vk4>
President Ewan McLeod
Secretary Bob Cumming
Treasurer David Guiley

VK4ERM
VK4YBN
VK4DCG

EVERY SUNDAY, at 9am LOCAL (Sat 2300 UTC). From Far North Queensland On 7.070/2 MHz. From South East Queensland- 1.825, 3.605, 7.116, 10.135, 14.342, 21.175, 52.525, 147.000, 438.500 MHz. Right throughout VK4 scan 146.8 to 148.0 MHz again at 9am local. SUNDAY 8:45pm hear LAST week's QNEWS broadcast 3.605 and 147.0 MHz from South East Queensland. MONDAY 7:00pm hear YESTERDAY's news again on 146.875 MHz broadcast from Brisbane Bayside repeater, and then 7:30pm on 3.605 and 147.0 MHz from 8th East Queensland. Text editions on packet internet and personal email, visit wia.org.au/vk4 News is updated 24/7 in both text and audio on this site. MP3 Audio from same website by 2300 hours each Saturday. Contact QNEWS, packet ap QNEWS@VK4WIE.BNE. QLD.AUS.OC email qnews@wia.org.au

VK5 South Australia and Northern Territory
(GPO Box 1234 Adelaide SA 5001)
Phone 08 8294 2992
web: <http://www.sant.wia.org.au>
e-mail: peter.reichelt@bigpond.com
President Jim McLachlan
Secretary Peter Reichelt
Treasurer Trevor Quirk

VK5NB
VK5APR
VK5ATQ

Every Sunday at 0900h Local. In VK5, VK5WI: 1.843 LSB, 147.000 FM Adelaide. Relays: 3.550 LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 AM, 146.800 FM Midura, 146.825 FM Barossa Valley, 146.900 FM South-East, 146.925 FM Central North, 147.925 FM Riverland, 438.475 FM Adelaide North. In VK8, Relays: 3.555 LSB, 7.065 LSB, 10.125 USB, 146.700 FM Darwin. In VK5, a repeat of the broadcast occurs Monday nights at 1930h Local on 3.585 LSB and 146.675 FM Willunga. The broadcast is available in "Real Audio" format from the website www.sant.wia.org.au Broadcast Page area.

VK6 Western Australia
PO Box 10 West Perth WA 6872
Phone 08 9351 8873
Web: <http://www.wia.org.au/vk6>
e-mail: vk6@wia.org.au

VK6NE
VK6XV
VK6OO

VK6WIA: 148.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Calaby, 147.350 (R) Busseton, 146.900 (R) Mt William (Bunbury), 147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 148.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz; country relays on 148.900, 147.000, 147.200, 147.250 and 147.350 MHz. Also in "Real Audio" format from the VK6 WIA website

VK7 Tasmania
PO Box 371 Hobart TAS 7001
Phone 03 6234 3553 (BH)
Web: <http://www.wia.org.au/vk7>
e-mail: vk7dg@wia.org.au
President Phil Corby
Secretary Dale Barnes
Treasurer Dale Barnes

VK7AZX
VK7DG
VK7DG

VK7WI: At 0930 hrs every Sunday on 146.700 MHz FM (VK7RHT, Hobart) and relayed on 147.000 MHz FM (VK7RAA, Launceston), 146.825 MHz FM (VK7RMD, Ulverstone), 146.750 MHz FM (VK7RNV, Ulverstone), 147.075 MHz FM (VK7RCW, Rosebery), 3.57 MHz LSB, 7.090 MHz LSB, 14.130 MHz USB and UHF CB Channel 15 in Hobart area.

VK8 Northern Territory is part of the VK5 Region and relays broadcasts from VK5 as shown, received on 14 or 28 MHz. The broadcast is downloaded via the Internet

Working in the Light

International Lighthouse Lightship Weekend 2003

ILLW is not a competition, but a get-together of like-minded amateurs around the world, celebrating centuries of great work done by lighthouses and their keepers in looking after the safety of mariners.

We finished the ILLW having contacted 18 lighthouses around the world as well as many "ordinary" amateur operators.

This year (2003) there were some 370 registered lighthouse stations participating in around 48 countries, up slightly on last year.

Will we do it again? You bet we will, it's just a matter of which lighthouse we select to activate next year.

(see complete story inside)



East McCrae Lighthouse, with McCrae Yacht Club in foreground

East McCrae Lighthouse

Below: L to R, Joe VK3BK1,
Carl VK3EMF, Glenn VK3CAM
& Marty VK3MF.



McCrae Lighthouse



The original McCrae Lighthouse was a timber structure built in 1854 and following years of service was dismantled in sections and transported by bullock wagon to the top of nearby Arthurs Seat to be used as a look out.

The present day lighthouse, built in England in 1874 by Chance Brothers & Co of Birmingham, was transported to Australia by sea and erected on this site in 1883.

The structure, which is listed on Victoria's Historic Buildings Register, is one of two such types remaining in Australia and at 33.5 metres is the tallest lighthouse in Port Phillip Bay.

The lighthouse comprises of a central circular column, housing a 120 step spiral staircase which ascends to the lantern housing. The central column is 1.5 metres in diameter and is constructed of riveted steel plate. The small brick portico at the base of the lighthouse has been added in more recent times.

The lantern housing located 30.8 metres above sea level is constructed of steel and timber and is protected by a glass surround and a lead dome roof. A narrow steel balcony surrounds the lantern housing.

The lighthouse was decommissioned in 1994, following modernisation of other navigational aids in Port Phillip Bay.

In 1998 the Victorian Government's Department of Natural Resources and Environment undertook significant restoration works to ensure the lighthouse's structural condition will be preserved well into the next century. The restoration which included the repair of corroded sections of the steelwork, the removal of existing coatings of paint and application of new coatings to the external structure will ensure its ongoing historical importance to the community.

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